# IINITED STATES

FORM APPROVED OMB NO. 1004-0137 Expires: July 31, 2010

UTU-01188

ONLLEDSIALES
DEPARTMENT OF THE INTERIOR
RUBEAU OF LAND MANAGEMENT

5. Lease Serial No.

APPLICATION FOR PERMIT TO DE	6. If Indian, Allottee or Tribe Name	
	ded on redriver	UTE Tribe
1a. Type of Work: X DRILL RE		7. If Unit or CA Agreement, Name and No.
1a. Type of Work: X DRILL RE	ENTER	891008900A
1b. Type of Well: X Gas Well Other	8. Lease Name and Well No.  Zone NBU 921-15G2S	
2. Name of Operator	Single Zone X Multiple 2	9. API Well No.
Kerr-McGee Oil & Gas Ons	hore, LP	10. Field and Pool, or Exploratory
	Phone No. (include area code)	10. Field and Pool, or Exploratory
P.O. Box 173779 Denver, CO 80217-3779	720.929.6226	Natural Buttes Field
4. Location of well (Report location clearly and In accordan	ce with any State requirements.	*) 11. Sec.,T.,R.,M.,or Blk.and Survey or Area
At surface 838 FNI 2631 NW NE 624800	× 44331304 40.04106	3
At surface 838 FNL 2631 NW NE 624800  At proposed prod. zone 1463 FNL 2355 FEL SW NE	14 40 03921 -109.53	2239 Sec 15 T 9S R 21E
At proposed prod. zone 1463 FNL 2355 FEL SW NE	-109,534145	)
14. Distance in miles and direction from the nearest town or po		12. Cou State
12.9 miles southeast of Ouray, Utah		Uintah Utah
15. Distance from proposed*	16. No. of acres in lease	
location to nearest	10. No. of acres in lease	17. Spacing Unit dedicated to this well
property or lease line, ft.	800	20
(Also to nearest drlg. unit line, if any)		
18. Distance from proposed location*	19. Proposed Depth	20. BLM/ BIA Bond No. on file
to nearest well, drilling, completed, 50' applied for, on this lease, ft.	10,178'	DI D0005220
applied for, on this least, it.		RLB0005239 Esti
21. Elevations (Show whether DF. RT, GR, etc.)	22. Aproximate date work w	1—
4792' GR	Upon Approval	10 days
	24. Attachments	
The following, completed in accordance with the requirements	of Onshore Oil and Gas Order 1	No. 1 shall be attached to this form:
	1	
Well plat certified by a registered surveyor.		e operations unless covered by existing bond on file(see
<ol> <li>A Drilling Plan.</li> <li>A Surface Use Plan ( if the location is on National Forest S</li> </ol>	item 20 above).	,·
SUPO shall be filed with the appropriate Forest Service Of		mon. ecific information and/ or plans as may be required by t
or appropriate to the first of the contract of	authorized officer	
25. Signature Nam		McIntyre
- King	io (17micai 19pca) ixoviii	DEC
Title Regulatory Analyst		RECEIVED
		WW 1.5 2008
Draft Nan	ne (Printed/Typed)	JGE 1 3 2000
	BRADLEY G. HILL	ANY OF OIL GAS & MINING
$\mathcal{M}$	ENVIRONMENTAL MANAGER	n
Application approval does not warrant or certify that the applicant hold	s legal or equitable title to those ri	ghts in the subject lease which would entitle the applicant to
conduct operations thereon.		
Conditions of approval, if any, are attached.		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make	it a crime for any person knowing	ly and willfully to make to any department or agency of the

States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

# NBU 921-15G2S NWNE Sec. 15, T9S,R21E UINTAH COUNTY, UTAH UTU-01188

## **ONSHORE ORDER NO. 1**

#### DRILLING PROGRAM

### 1. <u>Estimated Tops of Important Geologic Markers:</u>

<u>Formation</u>	<u>Depth</u>
Uinta	0- Surface
Green River	1706'
Bird's Nest	2029'
Mahogany	2409'
Wasatch	5104'
Mesaverde	7982'
MVU2	8950'
MVL1	9522'
TVD	10,100'
TD	10,178'

### 2. <u>Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:</u>

Substance	<u>Formation</u>	<u>Depth</u>
	Green River	1706'
	Bird's Nest	2029'
	Mahogany	2409'
Gas	Wasatch	5104'
Gas	Mesaverde	7982'
Gas	MVU2	8950'
Gas	MVL1	9522'
Water	N/A	
Other Minerals	N/A	

### 3. <u>Pressure Control Equipment</u> (Schematic Attached)

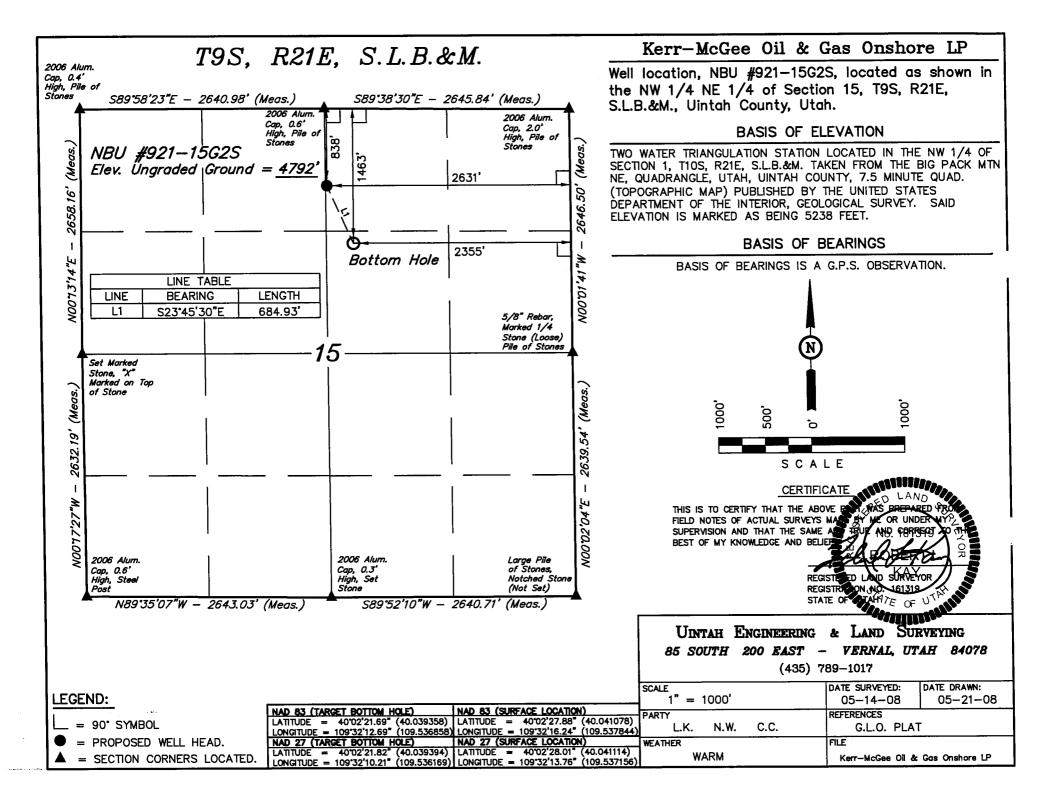
Please see the Natural Buttes Unit Standard Operating Procedure (SOP).

#### 4. Proposed Casing & Cementing Program:

Please see the Natural Buttes Unit SOP.

### 5. <u>Drilling Fluids Program</u>:

Please see the Natural Buttes Unit SOP.



### 6. Evaluation Program:

Please see the Natural Buttes Unit SOP.

### 7. Abnormal Conditions:

Maximum anticipated bottomhole pressure calculated at 10,100' TVD, approximately equals 6262 psi (calculated at 0.62 psi/foot).

Maximum anticipated surface pressure equals approximately 4040 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

### 8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

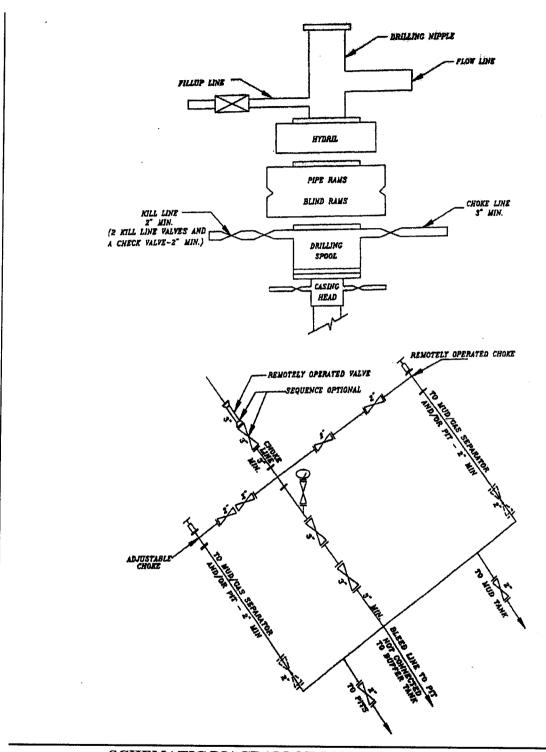
#### 9. Variances:

Please see Natural Buttes Unit SOP. Please see Kerr McGee's sundry regarding variance request to Onshore Order #2 regarding Air drilling for surface casing.

#### 10. Other Information:

Please see Natural Buttes Unit SOP.

### **EXHIBIT A**



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

### NBU 921-15G2S NWNE Sec. 15 ,T9S,R21E UINTAH COUNTY, UTAH UTU-01188

#### **ONSHORE ORDER NO. 1**

#### MULTI-POINT SURFACE USE & OPERATIONS PLAN

#### 1. Existing Roads:

Refer to the attached location directions.

Refer to Topo Maps A and B for location of access roads within a 2-mile radius.

#### 2. Planned Access Roads:

No new access road is planned, as this is a twin location. Refer to Topo Map B.

Existence of pipelines; maximum grade; turnouts; major cut and fills, culverts, or bridges; gates, cattle guards, fence cuts, or modifications to existing facilities were determined at the on-site.

Please see the Natural Buttes Unit Standard Operating Procedure (SOP).

#### 3. Location of Existing Wells Within a 1-Mile Radius:

Please refer to Topo Map C.

#### 4. Location of Existing & Proposed Facilities:

No new pipeline, as we will be utilizing the existing NBU #298 pipeline. No TOPO D attached.

Please see the Natural Buttes Unit SOP.

### Variances to Best Management Practices (BMPs) Requested:

All facilities will be painted within six months of installation. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded. The requested color is Carlsbad Canyon Brown (2.5Y 6/2), a non-reflective earthtone.

Interim Surface Reclamation Plan:

This exception is requested due to the current twin and multi-well program. If determined that this well will not be a candidate for either twinning &/or multi-well the operator shall spread the topsoil pile on the location up to the rig anchor points. The location will be reshaped to the

original contour to the extent possible. The operator will reseed the area using the BLM recommended seed mixture and reclamation methods.

#### 5. Location and Type of Water Supply:

Please see the Natural Buttes SOP.

#### 6. Source of Construction Materials:

Please see the Natural Buttes SOP.

#### 7. Methods of Handling Waste Materials:

Please see the Natural Buttes SOP.

A plastic reinforced liner is to be used as discussed during on-site inspection. It will be a minimum of 20 mil thick and felt, with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the liner will be disposed of in the pit.

Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to one of the pre-approved disposal sites: RNI, Sec. 5, T9S, R22E, NBU #159, Sec. 35, T9S R21E, Ace Oilfield, Sec. 2, T6S, R20E, MC&MC, Sec. 12, T6S, R19E, Pipeline Facility Sec. 36, T9S, R20E, Goat Pasture Evaporation Pond SW/4 Sec. 16, T10S, R22E, Bonanza Evaporation Pond Sec. 2, T10S, R23E (Request is in lieu of filing Form 3160-5, after initial production).

#### 8. Ancillary Facilities:

Please see the Natural Buttes SOP.

#### 9. Well Site Layout: (See Location Layout Diagram)

The attached Location Layout Diagram describes drill pad cross-sections, cuts and fills, and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s), and surface material stockpile(s).

Please see the attached diagram to describe rig orientation, parking areas, and access roads.

Location size may change prior to the drilling of the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling rig. The location will be resurveyed and a form 3160-5 will be submitted.

### 10. Plans for Reclamation of the Surface:

Please see the Natural Buttes SOP.

upon reclamation of the pit the following seed mixture will be used. A total of 12 lbs/acre will be used if the seeds are drilled (24 lbs/acre if the seeds are broadcast). The per acre requirements for *drilled* seed are:

Crested Wheatgrass 12 lbs.

Operator shall call the BLM for the seed mixture when final reclamation occurs.

### 11. Surface/Mineral Ownership:

The well pad and access road are located on lands owned by:

Ute Indian Tribe P.O. Box 70 Fort Duchesne, Utah 84026 (435) 722-5141

The mineral ownership is listed below:

United States of America Bureau of Land Management 170 South 500 East Vernal, UT 84078 (435)781-4400

#### 12. Stipulations

#### Wildlife Stipulations:

Antelope Stipulations:
 No construction from May 15 through June 20.

#### **Critical Soils Stipulations:**

No construction when wet.

#### 13. Other Information:

A Class III archaeological survey and a paleontological survey have been performed and will be submitted.

This location is not within 460' from the boundary of the Natural Buttes Unit, nor is it within 460' of any non-committed tract lying within the boundaries of the Unit.

#### 14. Lessee's or Operator's Representative & Certification:

Kevin McIntyre Regulatory Analyst Kerr-McGee Oil & Gas Onshore LP P.O. Box 173779 Denver, CO 80217-3779 (720) 929-6226 Randy Bayne Drilling Manager Kerr-McGee Oil & Gas Onshore LP 1368 South 1200 East Vernal, UT 84078 (435) 781-7018

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under the terms and conditions of the lease for the operations conducted upon leased lands.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Bureau of Indian Affairs Nationwide Bond #RLB0005239, Bureau of Land Management Nationwide Bold #WYB000291 and State of Utah Bond #RLB0005237.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed by the Operator, its contractors, and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

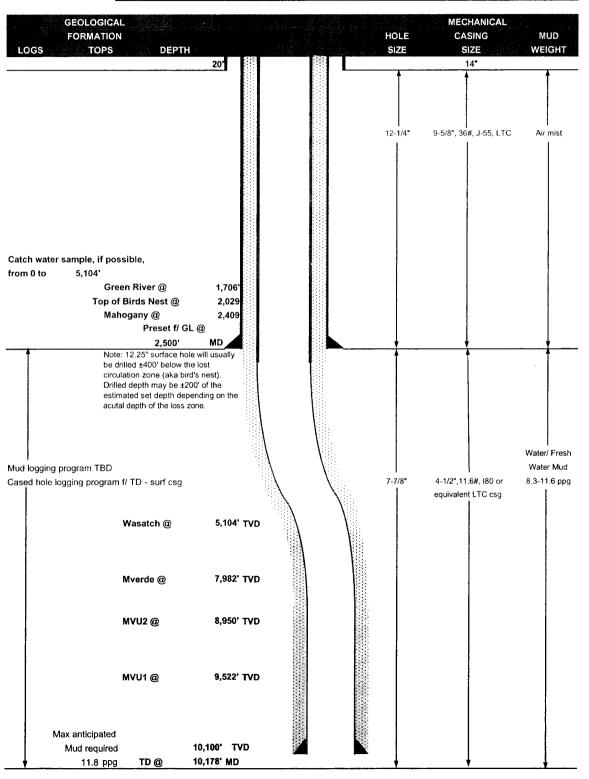
 Kevin McIntyre
 7/10/2008

 Date



### KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP	DATE	July 10, 2008	
WELL NAME	NBU 921-15G2S	TD	10,100' TVD	10,178' MD
FIELD Natural Butt	es COUNTY Uintah STATE	Utah	ELEVATION 4,792' (	GL KB 4,807'
SURFACE LOCATION	NWNE 838' FNL & 2631' FEL, Sec. 15, T 9S R 2	1E	-	
	Latitude: 40.041114 Longitude: -10	9.537156	NAD 27	<u> </u>
BTM HOLE LOCATION	SWNE 1463' FNL & 2355' FEL, Sec. 15, T 9S R	21E		
	Latitude: 40.039394 Longitude: -10	9.536169	NAD 27	<u></u>
OBJECTIVE ZONE(S)	Wasatch/Mesaverde			
ADDITIONAL INFO	Regulatory Agencies: BLM (MINERALS), BIA(SU	IRFACE), L	JDOGM, Tri-County Health D	ept.





#### KERR-McGEE OIL & GAS ONSHORE LP

#### DRILLING PROGRAM

#### **CASING PROGRAM**

	<b>5</b> 3333						DESIGN FACTORS			
	SIZE	INTER	/AL	WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION	
CONDUCTOR	14"	0-40	)'							
							3520	2020	453000	
SURFACE	9-5/8"	0	to 2500	36.00	J-55	LTC	0.89	1.73	6.41	
							7780	6350	201000	
PRODUCTION	4-1/2"	0	to 10100	11.60	I-80	LTC	1.96	1.02	1.95	
								And the second second second	A410000 1 11114 17 100 1 40 1 1 1 1	

- 1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point)
- 2) MASP (Prod Casing) = Pore Pressure at TD (.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD =

11.8 ppg)

.22 psi/ft = gradient for partially evac wellbore

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MASP 4040 psi

#### **CEMENT PROGRAM**

				e in the second			
		1000000000	DESCRIPTION	SACKS	EXCESS	WEIGHT	Y/ELD
SURFACE	LEAD	500	Premium cmt + 2% CaCl	215	60%	15.60	1.18
Option 1		:	+ .25 pps flocele				
	TOP OUT CMT (1)	200	20 gals sodium silicate + Premium cmt	50		15.60	1.18
			+ 2% CaCl + .25 pps flocele				
	TOP OUT CMT (2)	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
SURFACE			NOTE: If well will circulate water to surf	ace, optic	n 2 will be	utilized	
Option 2	LEAD	1500	65/35 Poz + 6% Gel + 10 pps gilsonite	360	35%	12.60	1.81
			+.25 pps Flocele + 3% salt BWOW		1000		
	TAIL	500	Premium cmt + 2% CaCl	180	35%	15.60	1.18
			+ .25 pps flocele				
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.60	1.18
PRODUCTIO	N LEAD	4,598'	Premium Lite II + 3% KCI + 0.25 pps	440	40%	11.00	3.38
			celloflake + 5 pps gilsonite + 10% gel		ear Tel		
			+ 0.5% extender				
			[HE HE] [전경: [대명 [HE HE] HE	148 884			
	TAIL	5,580'	50/50 Poz/G + 10% salt + 2% gel	1370	40%	14.30	1.31
			% (1.3 m)				

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### **FLOAT EQUIPMENT & CENTRALIZERS**

SL	ıκı	-A(	ニ

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring

centralizers. Thread lock guide shoe.

#### PRODUCTION

Float shoe, 1 jt, float collar. Centralize first 3 joints & every third joint to top of tail cement with bow spring centralizers.

#### ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. Test to 5,000 psi (annular to 2,500 psi) prior to drilling out. Record on chart recorder &

tour sheet. Function test rams on each trip. Maintain safety valve & inside BOP on rig floor at all times. Kelly to be equipped with upper

& lower kelly valves.

Drop Totco surveys every 2000'. Maximum allowable hole angle is 5 degrees.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

DRILLING ENGINEER:
--------------------

Brad Laney

DATE:

DRILLING SUPERINTENDENT:

Randy Bayne

DATE:

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained



# **Drilling Services**

**Proposal** 



# **ANADARKO - KERR McGEE**

NBU 921-15G2S

**UINTAH COUNTY, UTAH** 

WELL FILE: PLAN2

**DATE: JUNE 30, 2008** 

Weatherford International, Ltd.

15710 John F. Kennedy Blvd Houston, Texas 77032 USA +1.281.260.1300 Main +1.281.260.4730 Fax www.weatherford.com

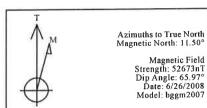




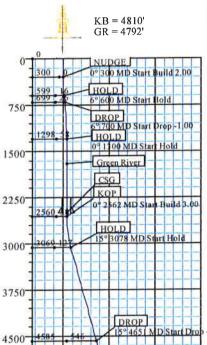
#### ANADARKO KERR MCGEE OIL & GAS NBU 921-15G2S UINTAH COUNTY, UTAH



# **Weatherford**



					SECTION	DETAILS				
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
- 1	0.00	0.00	156.21	0.00	0.00	0.00	0.00	0.00	0,00	
2	300.00	0.00	156.21	300.00	0.00	0.00	0.00	156.21	0,00	
3	600.00	6.00	156.21	599.45	-14.36	6.33	2.00	156.21	15.69	
3 4	700.00	6.00	156.21	698.90	-23.92	10.55	0.00	0.00	26,15	
5	1300.00	0.00	156.21	1297.81	-52.65	23.21	1.00	180.00	57.53	
6	2562.19	0.00	156.21	2560.00	-52.65	23.21	0.00	336.21	57,53	
9	3077.68	15.46	156.21	3069.26	-115.92	51.10	3.00	0.00	126.68	
8	4650.87	15.46	156.21	4585.49	-499.76	220.31	0.00	0.00	546,17	
9	5681.86	0.00	156.21	5604.00	-626.30	276.10	1.50	180.00	684.46	
10	10177.86	0.00	156 21	10100.00	-626,30	276.10	0.00	0.00	684.46	PBHL 15G2S



			WELL	DETAILS			
Name NBU 921-15G2S	+N/-S -7.09	+E/-W 59.88	Northing 628050.51	Easting 2549504.74	Latitude 40°02'28_010N	Longitude 109°32'13.760W	Slot N/A
FC	ORMATION 1	TOP DETAILS		1	FIELD I	DETAILS	

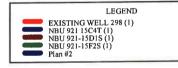
# FORMATION TOP DETAILS No. TVDPath MDPath Formation 1 1706.00 1708 19 Green River 2 5104.00 5180.42 Wasatch 3 7982.00 8059.86 Mesaverde

UINTAH COUNTY, UTAH (NAD 27)

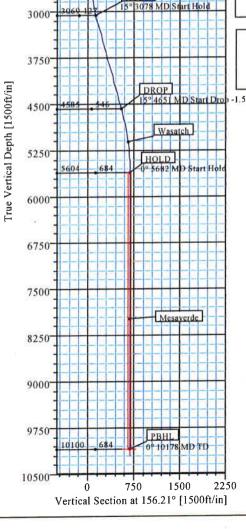
Geodetic System: US State Plane Coordinate System 1927
Ellipsoid: NAD27 (Clarke 1866)
Zone: Utah, Central Zone
Magnetic Model: bggm2007

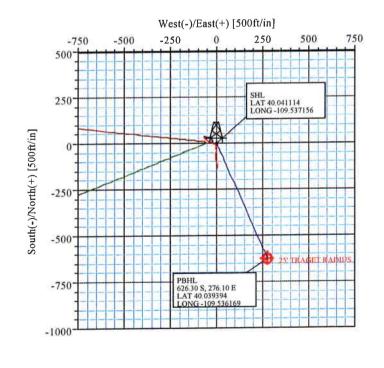
System Datum: Mean Sea Level
Local North: True North

CASING DETAILS								
No	TVD	MD	Name	Size				
1	2500.00	2502 19	CSG	0.00				



			TAR	GET DETAILS		
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL 15G2S	10100.00	-626.30	276.10	40°02'21.820N	109°32'10.210W	Circle (Radius: 25)





Plan: Plan #2 (NBU 921-15G2S/1)

Created By: Russell Joyner

Date: 6/30/2008





Anadarko-Kerr-McGee Company:

**UINTAH COUNTY, UTAH (NAD 27)** Field:

Site: Well:

NBU 921-15F PAD

NBU 921-15G2S

Wellpath:

Section (VS) Reference: Survey Calculation Method:

Co-ordinate(NE) Reference:

Vertical (TVD) Reference:

Date Composed: Version:

6/26/2008

Well (0.00N,0.00E,156.21Azi) Minimum Curvature

Well: NBU 921-15G2S, True North

Db: Sybase

Plan #2 Plan:

Yes Principal:

Tied-to:

Date: 6/30/2008

From Surface

Time: 14:54:35

SITE 4810.0

Field:

UINTAH COUNTY, UTAH (NAD 27)

Map System:US State Plane Coordinate System 1927

Geo Datum: NAD27 (Clarke 1866) Sys Datum: Mean Sea Level

Map Zone: Coordinate System: Geomagnetic Model: Utah, Central Zone Well Centre

bggm2007

Site:

NBU 921-15F PAD

Site Position: Geographic From:

0.00 ft **Position Uncertainty:** 4792.00 ft Ground Level:

628056.28 ft Northing: 2549444.72 ft Easting:

Latitude: Longitude:

28.080 N 40 2 14.530 W 109 32

North Reference:

True

Grid Convergence:

1.26 deg

Well:

NBU 921-15G2S

SITE

Northing: +N/-S -7.09 ft 59.88 ft Easting: +E/-W

6/26/2008

628050.51 ft 2549504.74 ft Latitude: Longitude:

Slot Name:

28.010 N 2 40 13.760 W 109 32

Position Uncertainty:

Well Position:

Wellpath:

Current Datum:

Magnetic Data:

Field Strength:

Vertical Section:

0.00 ft

52673 nT

Drilled From: Tie-on Depth:

Surface 0.00 ft Mean Sea Level Above System Datum: 11.50 deg

Declination: Mag Dip Angle: +E/-W

65.97 deg Direction deg

Depth From (TVD) ft ft 0.00 0.00

+N/-S

Height 4810.00 ft

0.00

156.21

#### Plan Section Information

MD	Incl	Azim	TVD	+N/-S	+E/-W	DLS	Build	Turn	TFO	Target
ft	deg	deg	ft	ft	ft	deg/100f	t deg/100ft	deg/100ft	deg	
0.00 300.00 600.00 700.00 1300.00 2562.19 3077.68 4650.87 5681.86	0.00 0.00 6.00 6.00 0.00 0.00 15.46 15.46 0.00	156.21 156.21 156.21 156.21 156.21 156.21 156.21 156.21 156.21 156.21	0.00 300.00 599.45 698.90 1297.81 2560.00 3069.26 4585.49 5604.00 10100.00	0.00 0.00 -14.36 -23.92 -52.65 -52.65 -115.92 -499.76 -626.30 -626.30	0.00 0.00 6.33 10.55 23.21 23.21 51.10 220.31 276.10	0.00 0.00 2.00 0.00 1.00 0.00 3.00 0.00 1.50 0.00	0.00 0.00 2.00 0.00 -1.00 0.00 3.00 0.00 -1.50 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 156.21 156.21 0.00 180.00 336.21 0.00 0.00 180.00 0.00	PBHL 15G2S

#### Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Comment
300.00 400.00 500.00 600.00 700.00	0.00 2.00 4.00 6.00 6.00	156.21 156.21 156.21 156.21 156.21	300.00 399.98 499.84 599.45 698.90	0.00 -1.60 -6.39 -14.36 -23.92	0.00 0.70 2.81 6.33 10.55	0.00 1.75 6.98 15.69 26.15	0.00 2.00 2.00 2.00 0.00	0.00 2.00 2.00 2.00 0.00	0.00 0.00 0.00 0.00 0.00	NUDGE HOLD DROP
800.00	5.00	156.21	798.44	-32.69	14.41	35.73	1.00	-1.00	0.00	
900.00	4.00	156.21	898.13	-39.87	17.58	43.58	1.00	-1.00	0.00	
1000.00	3.00	156.21	997.95	-45.46	20.04	49.68	1.00	-1.00	0.00	
1100.00	2.00	156.21	1097.85	-49.45	21.80	54.04	1.00	-1.00	0.00	
1200.00	1.00	156.21	1197.81	-51.85	22.86	56.66	1.00	-1.00	0.00	
1300.00	0.00	156.21	1297.81	-52.65	23.21	57.53	1.00	-1.00	0.00	HOLD
1400.00	0.00	156.21	1397.81	-52.65	23.21	57.53	0.00	0.00	0.00	





Company: Anadarko-Kerr-McGee
Field: UINTAH COUNTY, UTAH (NAD 27)
Site: NBU 921-15F PAD
Well: NBU 921-15G2S

Wellpath: 1

Date: 6/30/2008

Co-ordinate(NE) Reference: Vertical (TVD) Reference:

Section (VS) Reference: Survey Calculation Method:

Time: 14:54:35 Page: : Well: NBU 921-15G2S, True North

SITE 4810.0

Well (0.00N,0.00E,156.21Azi)

Db: Sybase Minimum Curvature

y 1D	Incl	Azim	TVD	N/S	E/W	VS	DLS	Build	Turn	Comment
to ft	deg	deg	ft	ft	ft	ft		deg/100ft		
500.00	0.00	156.21	1497.81	-52.65	23.21	57.53	0.00	0.00	0.00	
300.00 300.00	0.00	156.21	1597.81	-52.65	23.21	57.53	0.00	0.00	0.00	
700.00	0.00	156.21	1697.81	-52.65	23.21	57.53	0.00	0.00	0.00	
00.00	5.00	,						0.00	0.00	Green River
708.19	0.00	156.21	1706.00	-52.65	23.21	57.53	0.00	0.00	0.00	Green Wive
300.00	0.00	156.21	1797.81	-52.65	23.21	57.53	0.00	0.00	0.00	
900.00	0.00	156.21	1897.81	-52.65	23.21	57.53	0.00	0.00	0.00	
	0.00	156.21	1997.81	-52.65	23.21	57.53	0.00	0.00	0.00	
00.00		156.21	2097.81	-52.65	23.21	57.53	0.00	0.00	0.00	
100.00	0.00	150.21	2007.01	000						
200 00	0.00	156.21	2197.81	-52.65	23.21	57.53	0.00	0.00	0.00	
200.00	0.00	156.21	2297.81	-52.65	23.21	57.53	0.00	0.00	0.00	
300.00		156.21	2397.81	-52.65	23.21	57.53	0.00	0.00	0.00	
400.00	0.00	156.21	2497.81	-52.65	23.21	57.53	0.00	0.00	0.00	
500.00	0.00		2500.00	-52.65	23.21	57.53	0.00	0.00	0.00	CSG
502.19	0.00	156.21	2500.00	-02.00		2				
		450.04	0550.00	-52.65	23.21	57.53	0.00	0.00	0.00	KOP
561.19	0.00	156.21	2559.00		23.21	57.53	0.00	0.00	0.00	
562.19	0.00	156.21	2560.00	-52.65 52.00	23.21	57.91	3.00	3.00	0.00	
600.00	1.13	156.21	2597.81	-52.99		62.50	3.00	3.00	0.00	
700.00	4.13	156.21	2697.69	-57.19	25.21	72.32	3.00	3.00	0.00	
800.00	7.13	156.21	2797.19	-66.18	29.17	12.32	3.00	0.00	0.00	
				70.04	35.23	87.33	3.00	3.00	0.00	
900.00	10.13	156.21	2896.05	-79.91		107.49	3.00	3.00	0.00	
00.00	13.13	156.21	2993.98	-98.36	43.36	126.68	3.00	3.00	0.00	HOLD
077.68	15.46	156.21	3069.26	-115.92	51.10		0.00	0.00	0.00	
100.00	15.46	156.21	3090.76	-121.36	53.50	132.63		0.00	0.00	
200.00	15.46	156.21	3187.14	-145.76	64.26	159.30	0.00	0.00	0.00	
-				470.40	75.04	185.96	0.00	0.00	0.00	
300.00	15.46	156.21	3283.52	-170.16	75.01	212.63	0.00	0.00	0.00	
400.00	15.46	156.21	3379.90	-194.56	85.77		0.00	0.00	0.00	
500.00	15.46	156.21	3476.28	-218.96	96.53	239.29	0.00	0.00	0.00	
600.00	15.46	156.21	3572.66	-243.36	107.28	265.95	0.00	0.00		
700.00	15.46	156.21	3669.04	-267.76	118.04	292.62	0.00	0.00	0.00	
				000 15	400.70	210.20	0.00	0.00	0.00	
800.00	15.46	156.21	3765.42	-292.15	128.79	319.28	0.00	0.00		
900.00	15.46	156.21	3861.80	-316.55	139.55	345.95		0.00		
00.000	15.46	156.21	3958.18	-340.95	150.31	372.61	0.00	0.00		
100.00	15.46	156.21	4054.56	-365.35	161.06	399.28	0.00			
200.00	15.46	156.21	4150.94	-389.75	171.82	425.94	0.00	0.00	0.00	
					400.57	450.64	0.00	0.00	0.00	
300.00	15.46	156.21	4247.32	-414.15	182.57	452.61	0.00			
400.00	15.46	156.21	4343.70	-438.55	193.33	479.27				
500.00	15.46	156.21	4440.08	-462.95	204.09	505.94				
600.00	15.46	156.21	4536.46	-487.35	214.84	532.60				DROP
650.87	15.46	156.21	4585.49	-499.76	220.31	546.17	0.00	0.00	0.00	3
					005.47	EE0 00	1.50	-1.50	0.00	
700.00	14.73	156.21	4632.92	-511. <del>4</del> 7	225.47	558.96	1.00			
1800.00	13.23	156.21	4729.95	-533.57	235.22	583.11	1.50			
1900.00	11.73	156.21	4827.59	-553.34	243.93	604.72	1.50			
5000.00	10.23	156.21	4925.76	-570.76	251.61	623.76				
5100.00	8.73	156.21	5024.39	-585.83	258.26	640.23	1.50	-1.50	0.00	
					000.01	054.50	1 50	-1.50	0.00	Wasatch
5180.42	7.52	156.21	5104.00	-596.23	262.84	651.59				,
5200.00	7.23	156.21	5123.42	-598.53	263.86	654.11				
5300.00	5.73	156.21	5222.78	-608.85	268.41	665.39				
5400.00	4.23	156.21	5322.40	-616.79	271.91	674.07				
5500.00	2.73	156.21	5422.21	-622.34	274.35	680.13	1.50	-1.50	0.00	
	2.70							4.50	0.00	
5600.00	1.23	156.21	5522.15	-625.50	275.75	683.58				
5681.86	0.00	156.21	5604.00	-626.30	276.10	684.46				
5700.00	0.00	156.21	5622.14	-626.30	276.10	684.46				
5800.00	0.00	156.21	5722.14	-626.30	276.10	684.46				
5900.00	0.00	156.21	5822.14	-626.30	276.10	684.46	0.00	0.00	0.00	





Company: Anadarko-Kerr-McGee Field: UNTAH COUNTY, UTA

**UINTAH COUNTY, UTAH (NAD 27)** 

NBU 921-15F PAD Site: NBU 921-15G2S Well:

Wellpath: 1

Date: 6/30/2008 Co-ordinate(NE) Reference: Vertical (TVD) Reference:

Section (VS) Reference: Survey Calculation Method:

Time: 14:54:35 Page: : Well: NBU 921-15G2S, True North

SITE 4810.0 Well (0.00N,0.00E,156.21Azi) Minimum Curvature Dt

Db: Sybase

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Comment
	uey	ucy .								
0000.00	0.00	156 21	5922.14	-626.30	276.10	684.46	0.00	0.00	0.00	
6000.00	0.00	156.21		-626.30	276.10	684.46	0.00	0.00	0.00	
6100.00	0.00	156.21	6022.14			684.46	0.00	0.00	0.00	
6200.00	0.00	156.21	6122.14	-626.30	276.10			0.00	0.00	
6300.00	0.00	156.21	6222.14	-626.30	276.10	684.46	0.00			
6400.00	0.00	156.21	6322.14	-626.30	276.10	684.46	0.00	0.00	0.00	
6500.00	0.00	156.21	6422.14	-626.30	276.10	684.46	0.00	0.00	0.00	1
6600.00	0.00	156.21	6522.14	-626.30	276.10	684.46	0.00	0.00	0.00	
	0.00	156.21	6622.14	-626.30	276.10	684.46	0.00	0.00	0.00	
6700.00				-626.30	276.10	684.46	0.00	0.00	0.00	
6800.00	0.00	156.21	6722.14			684.46	0.00	0.00	0.00	
6900.00	0.00	156.21	6822.14	-626.30	276.10	004.40	0.00	0.00		
7000.00	0.00	156.21	6922.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7100.00	0.00	156.21	7022.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7200.00	0.00	156.21	7122.14	-626.30	276.10	684.46	0.00	0.00	0.00	
	0.00	156.21	7222.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7300.00					276.10	684.46	0.00	0.00	0.00	
7400.00	0.00	156.21	7322.14	-626.30	270.10	UU4.4U	0.00			
7500.00	0.00	156.21	7422.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7600.00	0.00	156.21	7522.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7700.00	0.00	156.21	7622.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7800.00	0.00	156.21	7722.14	-626.30	276.10	684.46	0.00	0.00	0.00	
			7822.14	-626.30	276.10	684.46	0.00	0.00	0.00	
7900.00	0.00	156.21	1022.14	-020.30	210.10	554. <del>4</del> 5	0.50			
8000.00	0.00	156.21	7922.14	-626.30	276.10	684.46	0.00	0.00	0.00	* *
8059.86	0.00	156.21	7982.00	-626.30	276.10	684.46	0.00	0.00	0.00	Mesaverde
8100.00	0.00	156.21	8022.14	-626.30	276.10	684.46	0.00	0.00	0.00	
8200.00	0.00	156.21	8122.14	-626.30	276.10	684.46	0.00	0.00	0.00	
8300.00	0.00	156.21	8222.14	-626.30	276.10	684.46	0.00	0.00	0.00	
				000 00	276.10	684.46	0.00	0.00	0.00	
8400.00	0.00	156.21	8322.14	-626.30			0.00	0.00	0.00	
8500.00	0.00	156.21	8422.14	-626.30	276.10	684.46		0.00	0.00	
8600.00	0.00	156.21	8522.14	-626.30	276.10	684.46	0.00		0.00	
8700.00	0.00	156.21	8622.14	-626.30	276.10	684.46	0.00	0.00		
8800.00	0.00	156.21	8722.14	-626.30	276.10	684.46	0.00	0.00	0.00	
0000.00	0.00	156.21	8822.14	-626.30	276.10	684.46	0.00	0.00	0.00	
8900.00			8922.14	-626.30	276.10	684.46	0.00	0.00	0.00	
9000.00	0.00	156.21		-626.30	276.10	684.46	0.00	0.00	0.00	
9100.00	0.00	156.21	9022.14				0.00	0.00	0.00	
9200.00	0.00	156.21	9122.14	-626.30	276.10	684.46		0.00	0.00	
9300.00	0.00	156.21	9222.14	-626.30	276.10	684.46	0.00	0.00	0.00	
9400.00	0.00	156.21	9322.14	-626.30	276.10	684.46	0.00	0.00	0.00	
9500.00	0.00	156.21	9422.14	-626.30	276.10	684.46	0.00	0.00	0.00	
9000.00			9522.14	-626.30	276.10	684.46	0.00	0.00	0.00	
9600.00	0.00	156.21			276.10	684.46	0.00	0.00	0.00	
9700.00 9800.00	0.00 0.00	156.21 156.21	9622.14 9722.14	-626.30 -626.30	276.10	684.46	0.00	0.00	0.00	
3000.00	0.00	100.21						2.22	0.00	
9900.00	0.00	156.21	9822.14	-626.30	276.10	684.46	0.00	0.00	0.00	
10000.00	0.00	156.21	9922.14	-626.30	276.10	684.46	0.00	0.00	0.00	
10100.00	0.00	156.21	10022.14	-626.30	276.10	684.46	0.00	0.00	0.00	
					276.10	684.46	0.00	0.00	0.00	PBHL 15G2S

Targets									
Name	Description	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	< Latitude Deg Min Sec	Deg Min Sec
PBHL 15G2S -Circle (Radiu	s: 25)		10100.00	-626.30	276.10	627430.412	549794.52	40 2 21.820	N 109 32 10.210 W





Company: Anadarko-Kerr-McGee
Field: UINTAH COUNTY, UTAH (NAD 27)

NBU 921-15F PAD NBU 921-15G2S Site: Well:

Wellpath:

Date: 6/30/2008

Co-ordinate(NE) Reference:

Vertical (TVD) Reference: Section (VS) Reference: Survey Calculation Method:

Time: 14:54:35 Page: :: Well: NBU 921-15G2S, True North

SITE 4810.0

Well (0.00N,0.00E,156.21Azi) Minimum Curvature

Db: Sybase

Casing Points
---------------

Casing Poll	nts				
MD	TVD	Diameter	Hole Size	Name	
ft	ft	in	in		
2502.19	2500.00	0.00	0.00	CSG	

#### Annotation

Miliotation			
MD ft	TVD ft		
300.00	300.00	NUDGE	
600.00	599.45	HOLD	
700.00	698.90	DROP	
1300.00	1297.81	HOLD	
2561.19	2559.00	KOP	
3077.68	3069.25	HOLD	
4650.87	4585.48	DROP	
5681.86	5604.00	HOLD	
10177.85	10099.99	PBHL	

Formation	s		T M. Jane	Dip Angle	Dip Direction
MD	TVD ft	Formations	Lithology	deg	deg
π	IL			0.00	0.00
1708.19	1706.00	Green River		0.00	0.00
5180.42	5104.00	Wasatch		0.00	0.00
8059.86	7982.00	Mesaverde			



# **Weatherford Drilling Services**

GeoDec v4.3.065

Report Date:	June 30,	2008				
Job Number: Customer:	ANADARKO	)		<del></del>		
Well Name:	NBU 921-	-15G2S				
API Number:						
Rig Name: Location:	IIINTA CO	OUNTY, UTAH				
Block:	OINIA CC	JONII, OIM				
Engineer:	R JOYNER	₹				
Geodetic Latitude / L	ongitude		Geodetic Latitude / Longi			
System: Latitude / Lo	ngitude		System: Latitude / Longit			
Projection: Geodetic			Projection: Geodetic Lati			
Datum: NAD 1927 (N	IADCON C	ONUS)	Datum: NAD 1927 (NAD	CON CONUS)		
Ellipsoid: Clarke 1866	3		Ellipsoid: Clarke 1866			
Latitude 40.0411140	atitude 40.0411140 DEG Latitude 40 2 28.0104000 DMS					
Longitude -109.5371	560 DEG		Longitude -109 32 13.76	516000 DIVIS		
Geodetic Location W	GS84	Elevation	on = 0.0 Meters			
Latitude = 40	.04111° N	40°	2 min 28.010 sec			
Longitude = 109	.53716° W	109°	32 min 13.762 sec			
Magnetic Declination	=	11.5030°	[True North Offset]			
Local Gravity =		.9995 g				
Local Field Strength	=	52672 nT	Magnetic Vector X =	21019 nT		
Magnetic Dip =		65.9690°	Magnetic Vector Y =	4278 nT		
Magnetic Model =		bggm2007	Magnetic Vector Z =	48107 nT		
Spud Date =	Jun	30, 2008	Magnetic Vector H =	21450 nT		
Signed:			Date:			



# Weatherford **Anticollision Report**



Company: Field:

Anadarko-Kerr-McGee

UINTAH COUNTY, UTAH (NAD 27)

Reference Site: Reference Well:

NBU 921-15G2S

NBU 921-15F PAD

Co-ordinate(NE) Reference: Vertical (TVD) Reference:

Date: 6/30/2008

Time: 14:53:44

Well: NBU 921-15G2S, True North

SITE 4810.0

Db: Sybase

Reference Wellpath: 1

NO GLOBAL SCAN: Using user defined selection & scan criteria Interpolation Method: MD + Stations Interval: 100.00 ft
Depth Range: 0.00 to 10177.86 ft

Depth Range: 0.00 to Maximum Radius: 10000.00 ft

Reference: Error Model: Scan Method: Plan: Plan #2 ISCWSA Ellipse Closest Approach 3D

Error Surface:

Ellipse

Date Composed:

Version: Tied-to:

6/26/2008 From Surface

Plan: Plan #2

Principal: Yes

Summary

Site

---- Offset Wellpath -----Wellpath Well

Offset Reference MD MD ft ft

Ctr-Ctr Edge Separation Distance Distance Factor ft ft

Warning

NBU 921-15F PAD EXISTING WELL 2981 VO

2700.00 2700.86 49.52 45.03

11.02

Site: Well: NBU 921-15F PAD **EXISTING WELL 298** 

Wellpath: 1 V0

ft 0.00 Inter-Site Error:

Refe	rence	Off	fset		ajor Axis		Offset I		Ctr-Ctr Distance	Edge S	Separation Factor	Warning
MD	TVD	MD	TVD	Ref		TFO-HS	North	East	Distance	ft	Lacion	
ft	ft	ft	ft	ft	ft	deg	ft	ft				N. Data
0.00	0.00	0.00	0.00	0.00	0.00	293.36	30.26	-70.07	76.32			No Data
100.00	100.00	100.41	100.41	0.09	0.04	293.62	30.47	-69.68	76.05	75.93	589.21	
	200.00	200.22	200.22	0.30	0.10	294.00	30.77	-69.10	75.64	75.25	193.48	
200.00	300.00	300.24	300.24	0.50	0.15	294.24	30.93	-68.70	75.34	74.69	115.40	
300.00	399.98	400.30	400.29	0.72	0.20	138.95	30.85	-68.34	76.28	75.37	83.28	
400.00	399.90	400.00	400.E0	J	•							
500.00	499.84	500.53	500.53	0.93	0.25	141.37	30.56	-67.76	79.67	78.48	67.28	
	599.45	600.59	600.57	1.17	0.31	144.95	30.05	-66.81	85.57	84.11	58.66	
600.00	698.90	700.62	700.59	1.43		148.24	28.66	-65.86	92.77	91.03	53.37	
700.00		800.26	800.20	1.49		150.45	26.62	-65.12	99.23	97.42	54.69	
800.00	798.44	900.34	900.27	1.37		152.03	24.64	-64.22	104.20	102.51	61.60	
900.00	898.13	900.34	500.27	1.07	0.11							
4000.00	007.05	1000.73	1000.63	1.27	0.52	153.15	22.60	-62.93	107.35	105.78	68.04	
1000.00	997.95		1101.14	1.18		153.91	20.41	-61.13	108.48		73.53	
1100.00	1097.85	1101.29	1200.61	1.10	0.64	154.54	18.64	-58.96	108.03	106.64	77.87	
1200.00	1197.81	1200.80	1301.00	1.04		154.99	17.15	-56.53	106.02	104.69	80.02	
1300.00	1297.81	1301.23		1.04		155.40	15.60	-53.63	102.83		74.84	
1400.00	1397.81	1401.55	1401.27	1.04	0.73	100.40						
	4 407 04	4500.04	1501.66	1.12	O 81	155.85	13.76	-50.40	99.21	97.66	64.29	
1500.00	1497.81	1502.01		1.12		156.42	11.75	-46.76	95.18	93.43	54.53	
1600.00	1597.81	1602.24	1601.81	1.23	0.07	157.48	9.53	-41.88	90.17	88.20	45.83	
1700.00	1697.81	1703.63	1703.05			159.19	6.51	-35.14	83.34	81.14	37.84	
1800.00	1797.81	1805.09	1804.24	1.51		161.03	2.80	-28.06	75.73	73.28	30.99	
1900.00	1897.81	1904.65	1903.48	1.67	1.00	101.03	2.00	20.00				
		0000 70	0000 04	1.85	1 16	162.72	-0.98	-21.80	68.67	65.98	25.52	
2000.00	1997.81	2003.78	2002.34			165.28	-3.44	-15.95	62.96	60.01	21.39	
2100.00	2097.81	2102.48	2100.83	2.02	1.20	168.04	-5.04	-11.06	58.70	55.50	18.33	
2200.00	2197.81	2201.79	2200.01	2.21	1.30	169.62	-7.03	-7.75	55.16	51.70	15.94	
2300.00	2297.81	2301.51	2299.66	2.40	1.30	170.32	-7.03 -9.31	-5.44	51.97	48.25	13.97	
2400.00	2397.81	2401.29	2399.38	2.59	1.42	170.32	-9.01	-J. <del>TT</del>	01.07			
			0.400.00	0.70	1 47	170.62	-11.51	-3.68	49.16	45.18	12.36	
2500.00	2497.81	2501.04	2499.09	2.78	1.47	170.52	-12.81	-2.91	47.64	43.50	11.51	
2562.19	2560.00	2563.05	2561.08	2.91	1.01	170.34	-13.61	-2.63	47.19	42.96	11.14	
2600.00	2597.81	2600.76	2598.78	2.98			-15.97	-2.03 -2.21	49.52	45.03	11.02	
2700.00	2697.69	2700.86	2698.85	3.21		170.15	-15.97	-2.21 -1.77	56.82	52.07	11.96	
2800.00	2797.19	2800.62	2798.58	3.47	1.64	170.73	-10.04	-1.11	30.02	02.07		
				0.70	4.60	171 62	-20.85	-1.75	69.68	64.68	13.92	
2900.00	2896.05	2899.20	2897.13	3.76	1.69	171.63	-20.85 -22.76	-1.75 -2.05	88.20	82.95	16.77	
3000.00	2993.98	2997.34	2995.25	4.11	1./4	172.63		-2.03		100.65	19.45	
3077.68	3069.26	3073.10	3071.00	4.43	1.78	173.43	-24.19	-2.19 -2.25		106.13	20.22	
3100.00	3090.76	3094.78	3092.67	4.52		173.63	-24.64		136 30	130.57	23.42	
3200.00	3187.14	3192.00	3189.86	4.97	1.84	174.25	-26.92	-2.61	130.38	10.07	20.72	
				= 40	4.00	174 66	-29.42	-2.90	160 90	154.77	26,25	
3300.00	3283.52	3289.26	3287.09	5.43	1.89	174.66	-29.42	-2.90	100.80	107.17		



# Weatherford **Anticollision Report**



Company: Field:

Reference Site: Reference Well:

Anadarko-Kerr-McGee UINTAH COUNTY, UTAH (NAD 27) NBU 921-15F PAD

NBU 921-15G2S

Co-ordinate(NE) Reference: Vertical (TVD) Reference:

Date: 6/30/2008

Time: 14:53:44

2

Well: NBU 921-15G2S, True North

SITE 4810.0

Db: Sybase

Well:

NBU 921-15F PAD EXISTING WELL 298

Wellpath: 1 VO

Reference Wellpath: 1

0.00 ft Inter-Site Error:

Wellpath:	1 VU								Tiller-Silv		\	
Refe	rence	Of	fset	Semi-M	lajor Axis			Location	Ctr-Ctr	Edge S	Separation	Wanning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East		Distance	Factor	Warning
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
					4.04	475.00	-31.94	-2.77	185.22	178 78	28.78	
3400.00	3379.90	3386.61	3384.41	5.91		175.08			209.41		31.04	
3500.00	3476.28	3483.72	3481.48	6.40		175.46	-34.45	-2.37			33.10	
3600.00	3572.66	3580.79	3578.52	6.89	2.05	175.79	-36.94	-1.91	233.59	220.00		
3700.00	3669.04	3677.94	3675.64	7.40	2.10	176.01	-39.56	-1.60	257.74	250.37	34.98	
											00.07	
3800.00	3765.42	3775.14	3772.79	7.90	2.16	176.03	-42.57	-1.92	281.84		36.67	
3900.00	3861.80	3873.48	3871.07	8.41	2.21	175.95	-46.02	-2.62	305.76		38.18	
4000.00	3958.18	3972.44	3969.95	8.93	2.27	175.88	-49.96	-3.09	329.16	320.83	39.52	
4100.00	4054.56	4069.36	4066.78	9.45		175.82	-54.10	-3.44	352.26	343.61	40.72	
		4165.30	4162.64	9.97		175.75	-57.98	-4.02	375.67	366.69	41.87	
4200.00	4150.94	4105.50	7102.07	5.01	2.00							
	40.47.00	4000.04	4260.10	10.49	2 44	175.67	-61.79	-4.79	399.28	389.98	42.94	
4300.00	4247.32	4262.84		11.01		175.61	-65.85	-5.35	422.61		43.91	
4400.00	4343.70	4361.48	4358.65				-70.28	-5.72	445.57		44.77	
4500.00	4440.08	4460.92	4457.99	11.54	2.50	175.56		-6.08	467.98		45.51	
4600.00	4536.46	4561.00	4557.95	12.06	2.02	175.48	-75.36 -79.20		479.16		45.84	
4650.87	4585.49	4612.04	4608.91	12.33	2.65	175.43	-78.20	-6.25	418.10	TUU./ !	70.07	
							04.04	0.00	400 E4	470 AD	46.47	
4700.00	4632.92	4661.52	4658.31	12.51		175.41	-81.01	-6.22	489.51	407.74		
4800.00	4729.95	4762.83	4759.45	12.69		175.44	-86.80	-5.23	508.22		48.35	
4900.00	4827.59	4861.29	4857.73	12.85	2.82	175.53	-92.40	-3.39	523.97		50.02	
5000.00	4925.76	4958.02	4954.31	13.00	2.89	175.60	-97.58	-1.73	537.49	527.06	51.53	
5100.00	5024.39	5055.12	5051.28	13.12	2.95	175.63	-102.42	-0.28	548.86	538.48	52.90	
0100.00	002 1.00	••••										
5200.00	5123.42	5152.53	5148.57	13.21	3.02	175.66	-106.85	1.15	558.03	547.71	54.12	
5300.00	5222.78	5249.10	5245.05	13.27	3.08	175.69	-110.81	2.49	565.03		55.21	
5400.00	5322.40	5344.83	5340.71	13.30		175.67		3.33	570.11	559.96	56.19	
		5442.96	5438.80	13.30	3 19	175.60	-117.33	3.65	573.23	563.18	57.05	
5500.00	5422.21		5540.13	13.26	3.75	175.50	-120 62	4.00	573.65		57.71	
5600.00	5522.15	5544.35	5540.15	13.20	3.20	110.00						
1		F000 07	rean ea	12 21	2 20	331.61	123 44	4.37	571.89	560.23	49.05	
5681.86	5604.00	5626.87	5622.60	13.21	3.30	331.59	124.06	4.44	571.30		48.95	
5700.00	5622.14	5644.94	5640.66	13.21	3.31	331.38	127.00	4.78	568.09		47.89	
5800.00	5722.14	5744.58	5740.24	13.29	3.37	331.46	420.00	4.96	564.94	552.89	46.86	
5900.00	5822.14	5843.81	5839.41	13.38		331.30			562.00	540.74	45.85	
6000.00	5922.14	5942.53	5938.08	13.46	3.49	331.12	-134.39	4.78	302.00	J <del>4</del> 3.74	40.00	
							407.70	4.04	559.28	E46 02	44.87	
6100.00	6022.14	6041.15	6036.63	13.55	3.55	330.91	-137.72	4.31	564.10	540.02 EE1.40	44.76	
6200.00	6122.14	6050.00	6045.48	13.64	3.55	330.90	-137.99	4.29	504.10	570.00	46.02	
6300.00	6222.14	6050.00	6045.48	13.74	3.55	330.90	-137.99	4.29	586.12	0/0.30		
6400.00	6322.14	6050.00	6045.48	13.84		330.90		4.29	623.59		48.44	
6500.00	6422.14	6050.00	6045.48	13.94	3.55	330.90	-137.99	4.29	673.94	660.93	51.80	
	- ·· •										FF 55	
6600.00	6522.14	6050.00	6045.48	14.04	3.55	330.90	-137.99	4.29	734.53	/21.38	55.86	
6700.00	6622.14	6050.00	6045.48	14.14	3.55	330.90	-137.99	4.29	803.03		60.41	
6800.00	6722.14	6050.00	6045.48	14.25	3.55	330.90	-137.99	4.29	877.61		65.31	
6900.00	6822.14	6050.00	6045.48	14.36	3.55	330.90	-137.99	4.29	956.83		70.43	
7000.00	6922.14	6050.00	6045.48	14.47	3.55	330.90	-137.99	4.29	1039.64	1025.91	75.69	
7 000.00	0022.17	0000.00	55.5.15									
7100.00	7022.14	6050.00	6045.48	14.58	3.55	330.90	-137.99	4.29	1125.25	1111.36	81.02	
7100.00		6050.00	6045.48	14.70	3.55	330.90	-137.99	4.29	1213.06	1199.02	86.39	
7200.00	7122.14		6045.48	14.70	3.55	330.90	-137 99	4.29	1302.63	1288.44	91.74	
7300.00	7222.14	6050.00		14.02	3.55	330.90	-137 99	4.29	1393.62		97.07	
7400.00	7322.14	6050.00	6045.48	15.06	3.55 3.55	330.90	-137 90	4.29	1485.77		102.35	
7500.00	7422.14	6050.00	6045.48	15.00	3.55	JJU.80	101.00	7.20				
		0050 00	0045 40	45.40	2 55	330.90	_137.00	4.29	1578.88	1564.20	107.56	
7600.00	7522.14	6050.00	6045.48	15.18	J.JJ	330.90	137.00	4.29	1672.78	1657.94	112.71	
7700.00	7622.14	6050.00	6045.48	15.31	3.33	330.90	427.00	4.29	1767.35	1752 34	117.77	
7800.00	7722.14	6050.00	6045.48	15.44	3.55	330.90	-137.99		1862.48		122.75	
7900.00	7822.14	6050.00	6045.48	15.56		330.90		4.29			127.64	
8000.00	7922.14	6050.00	6045.48	15.70	3.55	330.90	-137.99	4.29	1958.11	1344.//	121.04	
1									0054444	2020.02	122 44	
8100.00	8022.14	6050.00	6045.48	15.83	3.55	330.90	-137.99	4.29	2054.14 2		132.44	
8200.00	8122.14	6050.00	6045.48	15.96	3.55	330.90	-137.99	4.29	2150.542	2134.80	137.15	



# Weatherford **Anticollision Report**



Company: Field:

Reference Site: Reference Well: Reference Wellpath: 1

Anadarko-Kerr-McGee UINTAH COUNTY, UTAH (NAD 27) NBU 921-15F PAD NBU 921-15G2S

Date: 6/30/2008

Time: 14:53:44

Co-ordinate(NE) Reference: Vertical (TVD) Reference:

Well: NBU 921-15G2S, True North

SITE 4810.0

Db: Sybase

Site:

NBU 921-15F PAD

Well:	EXISTING WELL 29
Wallmoths	1 1/0

Well: Wellpath:	EXISTING 1 V0	S WELL 29	8						Inter-Site E	error:	0.00	ft
Reference		Offset		Semi-Major Axis		Offset Location		Ctr-Ctr Edge		Separation	***	
MD	TVD	MD	TVD	Ref	Offset	TFO-HS		East	Distance D		e Factor	Warning
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft			
8300.00	8222.14	6050.00	6045.48	16.10	3.55	330.90	-137.99	4.29	2247.26 223		141.77	
8400.00	8322.14	6050.00	6045.48	16.24	3.55	330.90	-137.99	4.29	2344.25 232		146.29	
8500.00	8422.14	6050.00	6045.48	16.37	3.55	330.90	-137.99	4.29	2441.48 242	25.28	150.72	
0300.00	0422.11	0000.00									455.00	
8600.00	8522.14	6050.00	6045.48	16.51	3.55	330.90	-137.99	4.29	2538.93 252		155.06	
8700.00	8622.14	6050.00	6045.48	16.66	3.55	330.90	-137.99	4.29	2636.57 262		159.31	
8800.00	8722.14	6050.00	6045.48	16.80	3.55	330.90	-137.99	4.29	2734.38 271		163.47	
	8822.14	6050.00	6045.48	16.94	3.55	330.90	-137.99	4.29	2832.34 281	15.44	167.55	
8900.00		6050.00	6045.48	17.09	3.55	330.90	-137.99	4.29	2930.44 291	13.36	171.53	
9000.00	8922.14	0030.00	0040.40	17.00	0.00	555.55						
9100.00	9022.14	6050.00	6045.48	17.24	3.55	330.90	-137.99	4.29	3028.67 301	11.40	175.44	
	9122.14	6050.00	6045.48	17.39	3.55		-137.99	4.29	3127.01 310	9.56	179.26	
9200.00		6050.00	6045.48	17.54	3.55		-137.99	4.29	3225.44 320	7.82	183.00	
9300.00	9222.14	6050.00	6045.48	17.69	3.55	000.00	-137.99	4.29	3323.98 330	06.17	186.66	
9400.00	9322.14		6045.48	17.84	3.55		-137.99	4.29	3422.60 340	04.60	190.24	
9500.00	9422.14	6050.00	0045.40	17.04	0.00	000.00						
0000 00	0500.44	6050.00	6045.48	17.99	3.55	330.90	-137.99	4.29	3521.29 350	3.12	193.75	
9600.00	9522.14	6050.00	6045.48	18.15	3.55		-137.99	4.29	3620.06 360	1.70	197.18	
9700.00	9622.14		6045.48	18.30	3.55	000.00	-137.99	4.29	3718.89 370	00.35	200.54	
9800.00	9722.14	6050.00		18.46	3.55	330.90		4.29	3817.79 379		203.83	
9900.00	9822.14	6050.00	6045.48	18.62	3.55	330.90		4.29	3916.74 389		207.05	
10000.00	9922.14	6050.00	6045.48	10.02	3.55	JJU.80	107.00	0	22.277.200			
10100.00	40000 44	6050.00	6045.48	18.77	3 55	330.90	-137.99	4.29	4015.74 399	96.63	210.21	
	10022.14 10100.00	6050.00	6045.48	18.90	3.55		-137.99	4.29	4092.85 407	73.60	212.62	

# Kerr-McGee Oil & Gas Onshore LP

NBU #921-15D1S, #921-15F2S, #921-15C4T & #921-15G2S SECTION 15, T9S, R21E, S.L.B.&M.

PROCEED IN A WESTERLY DIRECTION FROM VERNAL, UTAH ALONG U.S. HIGHWAY 40 APPROXIMATELY 14.0 MILES TO THE JUNCTION OF STATE HIGHWAY 88; TURN LEFT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 17.0 MILES TO OURAY, UTAH; PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 1.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY, THEN SOUTHEASTERLY, THEN NORTHEASTERLY DIRECTION APPROXIMATELY 3.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN RIGHT AND PROCEED IN A SOUTHEASTERLY, THEN EASTERY DIRECTION APPROXIMATELY 1.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; **SOUTHEASTERLY** DIRECTION PROCEED IN Α AND LEFT APPROXIMATELY 3.2 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHEAST; TURN LEFT AND PROCEED IN A SOUTHEASTERLY, THEN NORTHEASTERLY DIRECTION APPROXIMATELY 1.8 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHEAST; TURN LEFT AND PROCEED IN A NORTHEASTERLY DIRECTION APPROXIMATELY 0.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE NORTHWEST; TURN LEFT AND PROCEED IN A NORTHWESTERLY DIRECTION APPROXIMATELY 0.2 MILES TO THE EXISTING NBU #298 AND THE PROPOSED LOCATION.

TOTAL DISTANCE FROM VERNAL, UTAH TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 43.9 MILES.

# Kerr-McGee Oil & Gas Onshore LP

NBU #921-15D1S, #921-15F2S, #921-15C4T & #921-15G2S LOCATED IN UINTAH COUNTY, UTAH

**SECTION 15, T9S, R21E, S.L.B.&M.** 

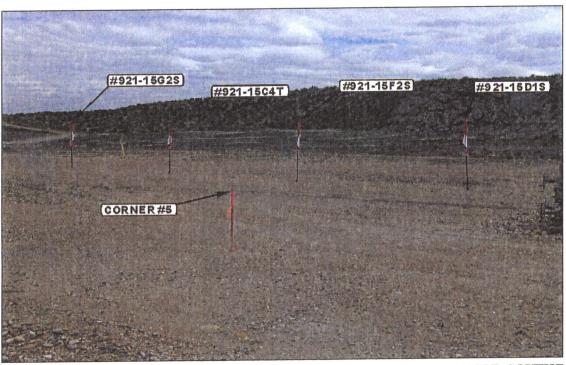


PHOTO: VIEW FROM CORNER #5TO LOCATION STAKES

CAMERA ANGLE: SOUTHEASTERLY

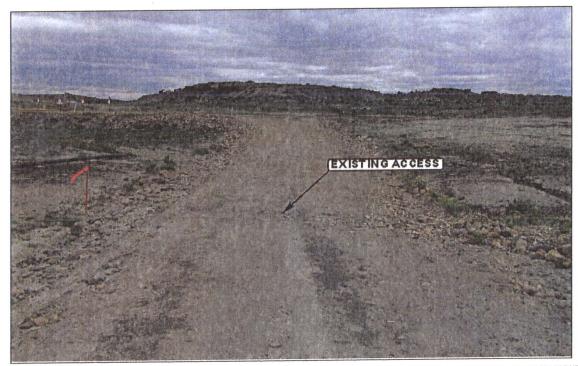


PHOTO: VIEW OF EXISTING ACCESS

CAMERA ANGLE: NORTHWESTERLY



Uintah Engineering & Land Surveying 85 South 200 East Vemal, Utah 84078 435-789-1017 uels@uelsinc.com

LOCATION PHOTOS

MONTH DAY

YEAR

TAKEN BY: L.K. DRAWN BY:C.C. REVISED: 00-00-00

PHOTO

# Kerr-McGee Oil & Gas Onshore LP

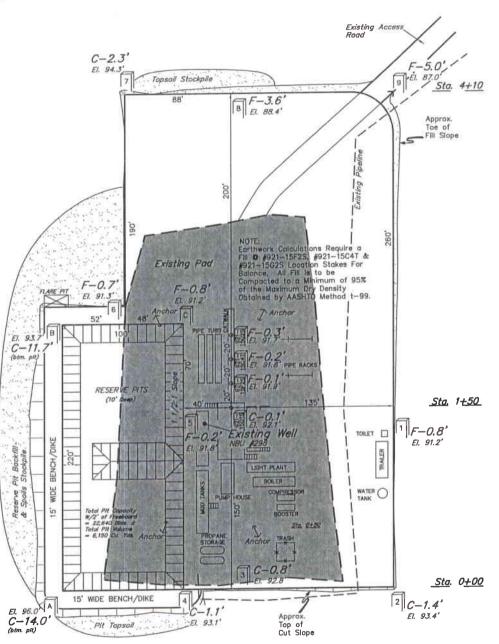
NBU #921-15D1S, #921-15F2S, #921-15C4T & #921-15G2S SECTION 15, T9S, R21E, S.L.B.&M. N 1/2







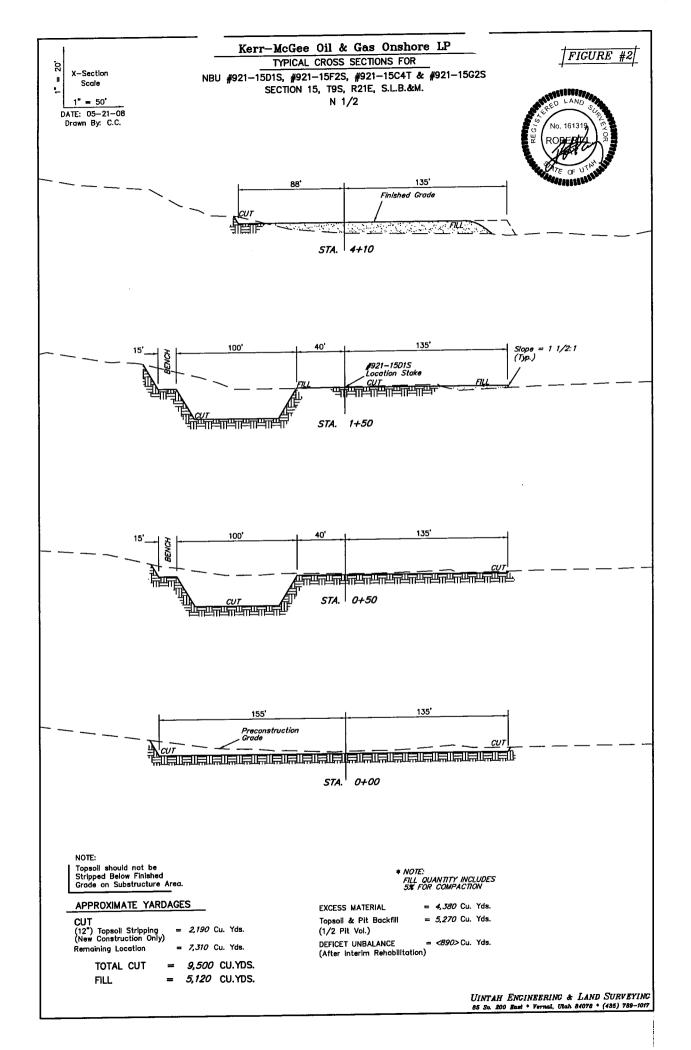
E

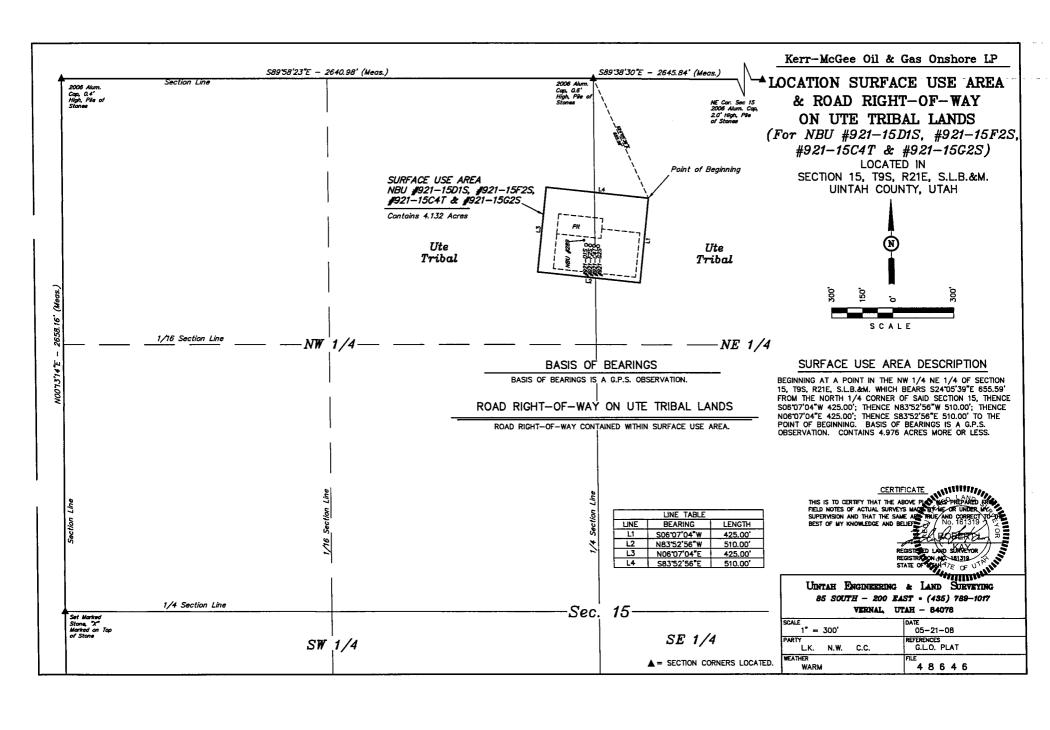


#### NOTES:

Elev. Ungraded Ground At #921-15015 Loc. Stake = 4792.1'
FINISHED GRADE ELEV. AT #921-15015 LOC. STAKE = 4792.0'

UINTAH ENGINEERING & LAND SURVEYING 85 So. 200 East \* Vernal, Utah 84078 \* (435) 789-1017





# Kerr-McGee Oil & Gas Onshore Lr NBU #921-15D1S, #921-15C2S, #921-15C4T & #921-15G2S ROAD RIGHT-OF-WAY & SURFACE USE AREA SECTION 15. T9S. R21E, S.L.B.&M.

### TOTAL ROAD RIGHT-OF-WAY ON UTE TRIBAL LANDS

ROAD RIGHT-OF-WAY CONTAINED WITHIN SURFACE USE AREA.

# ENGINEER'S AFFIDAVIT

STATE OF UTAH COUNTY OF UINTAH

ROBERT L. KAY, BEING FIRST DULY SWORN DEPOSES AND STATES THAT HE IS THE REGISTERED LAND SURVEYOR, FOR Kerr-McGee Oil & Gas Onshore LP, THAT THESE SURVEYS WERE MADE BY HIM (OR UNDER HIS SUPERVISION): THAT HE HAS EXAMINED THE FIELD NOTES OF THE SURVEYS OF THE SURFACE USE AREA AND THAT SAID RIGHT-OF-WAY AS DESCRIBED AND SHOWN ON THIS MAP, THAT THIS MAP WAS PREPARED THAT SAID RIGHT-OF-WAY, BEGINNING AND ENDING AS SAID THAT SAID RIGHT-OF-WAY, BEGINNING AND ENDING AS SAID THAT SAID RIGHT-OF-WAY, BEGINNING AND ENDING AS

ACCURATELY REPRESENTED.

# ACKNOWLEDGEMENT

SUBSCRIBED AND SWORN BEFORE ME THIS 17 DAY OF\_

MY COMMISSION EXPIRES .

APPLICANT'S CERTIFICATE

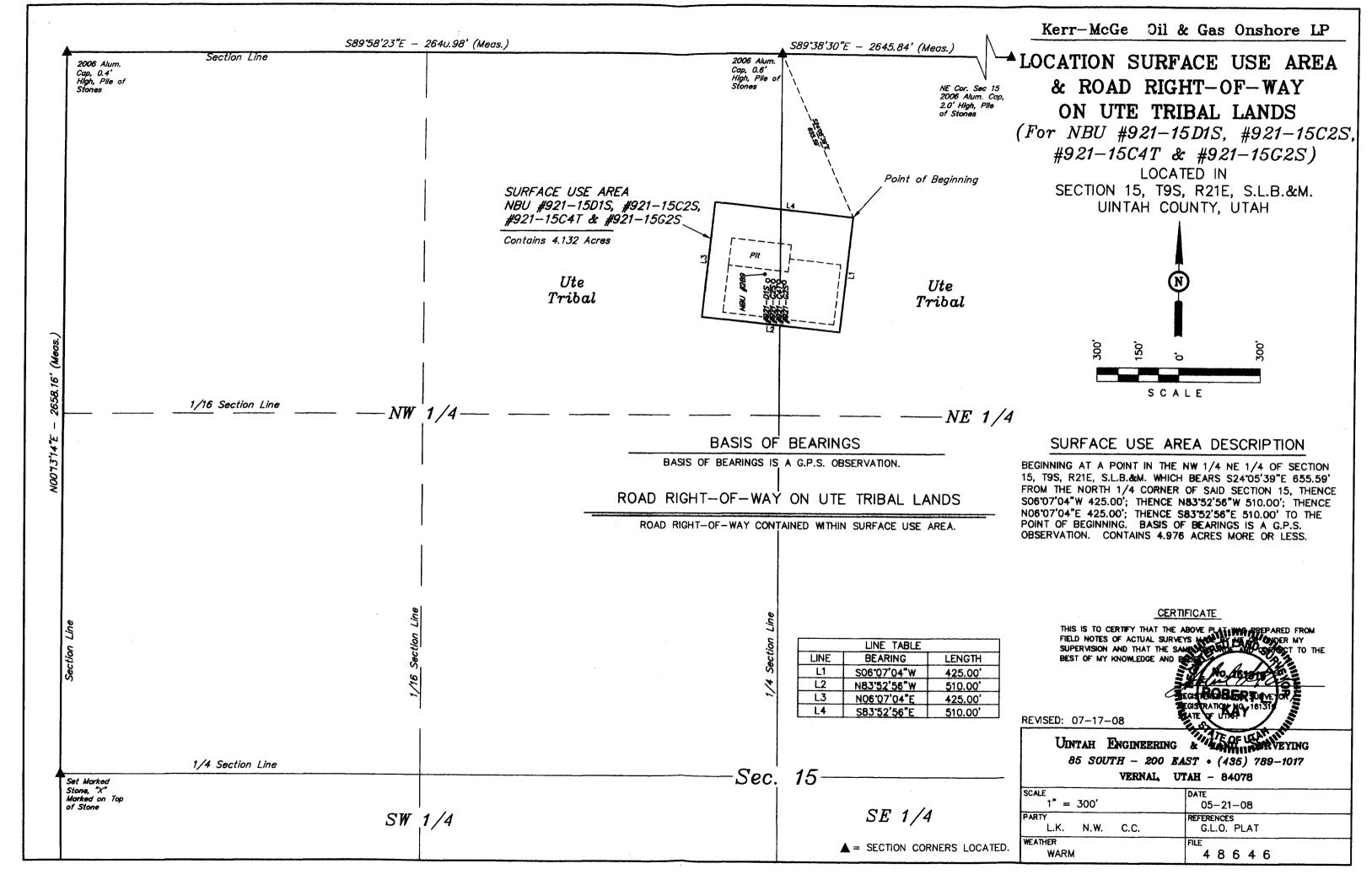
**FUBLINOtary Public** ITARACY D. HENLINE 3379 East 5000 South Vernal, Utah 84078 My Commission Expires August 17, 2010 State of Utah

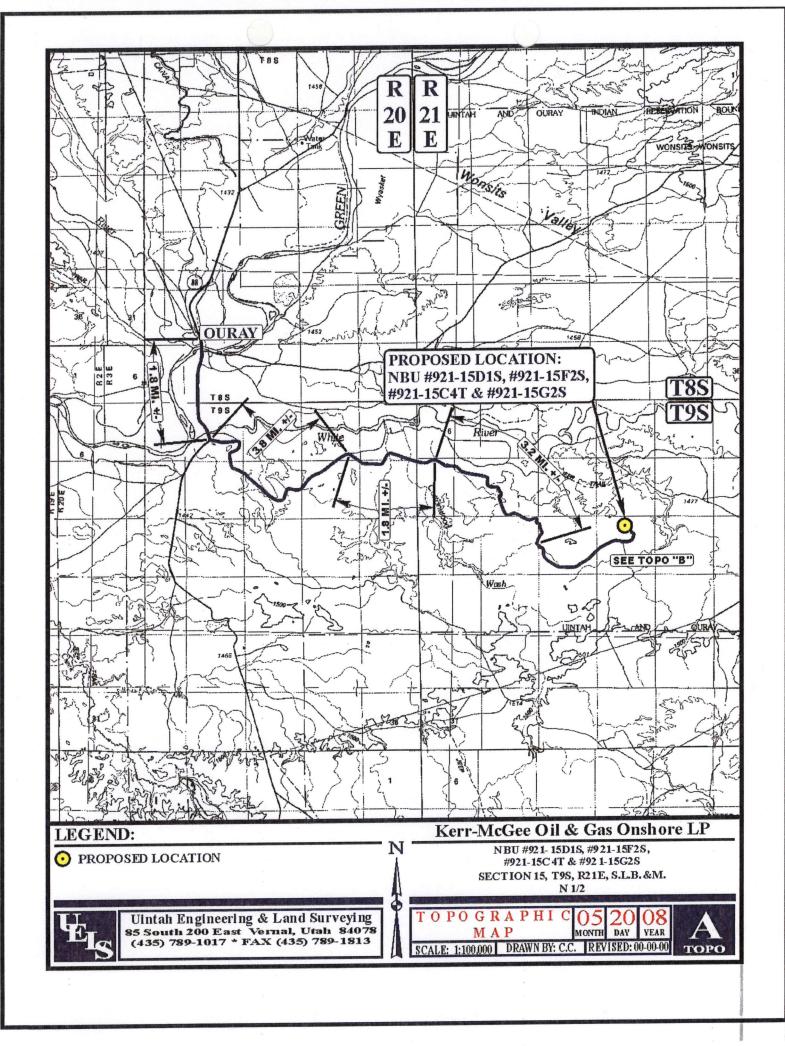
I, RANDY BAYNE, DO HEREBY CERTIFY THAT I AM THE AGENT FOR Kerr-McGee Oil & Gas Onshore LP, HEREINAFTER DESIGNATED THE APPLICANT; THAT ROBERT L. KAY WHO SUBSCRIBED TO THE FOREGOING AFFIDAVIT, IS EMPLOYED BY THE APPLICANT AS A LAND SURVEYOR AND THAT HE WAS DIRECTED BY THE APPLICANT TO SURVEY THE LOCATION OF THIS SURFACE USE AREA AND ROAD RIGHT-OF-WAY, BEGINNING AND ENDING AS SHOWN, THAT SAID SURFACE USE AREA AND ROAD RIGHT-OF-WAY ARE ACCURATELY REPRESENTED ON THIS MAP; THAT SUCH SURVEY AS REPRESENTED ON THIS MAP HAS BEEN ADOPTED BY THE APPLICANT AS THE DEFINITE LOCATION OF THE RIGHT-OF-WAY THEREBY SHOWN; AND THAT THE MAP HAS BEEN PREPARED TO BE FILED WITH THE SECRETARY OF THE INTERIOR OR HIS DULY AUTHORIZED REPRESENTATIVE AS PART OF THE APPLICATION FOR SAID RIGHT-OF-WAY TO BE GRANTED THE APPLICANT, ITS SUCCESSORS AND ASSIGNS, WITH THE RIGHT TO CONSTRUCT, MAINTAIN, AND REPAIR IMPROVEMENTS, THEREON AND THEREOVER, FOR SUCH PURPOSES, AND WITH THE FURTHER RIGHT IN THE APPLICANT, ITS SUCCESSORS AND ASSIGNS TO TRANSFER THIS RIGHT-OF-WAY BY ASSIGNMENT, GRANT, OR OTHERWISE.

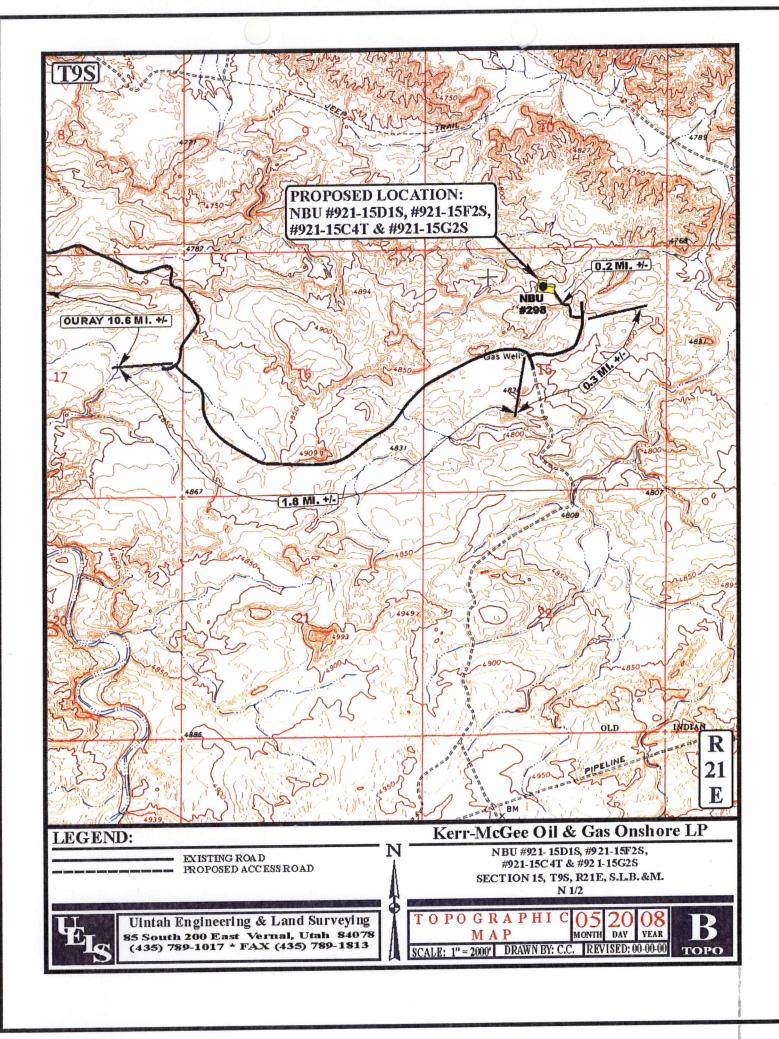
**APPLICANT** 

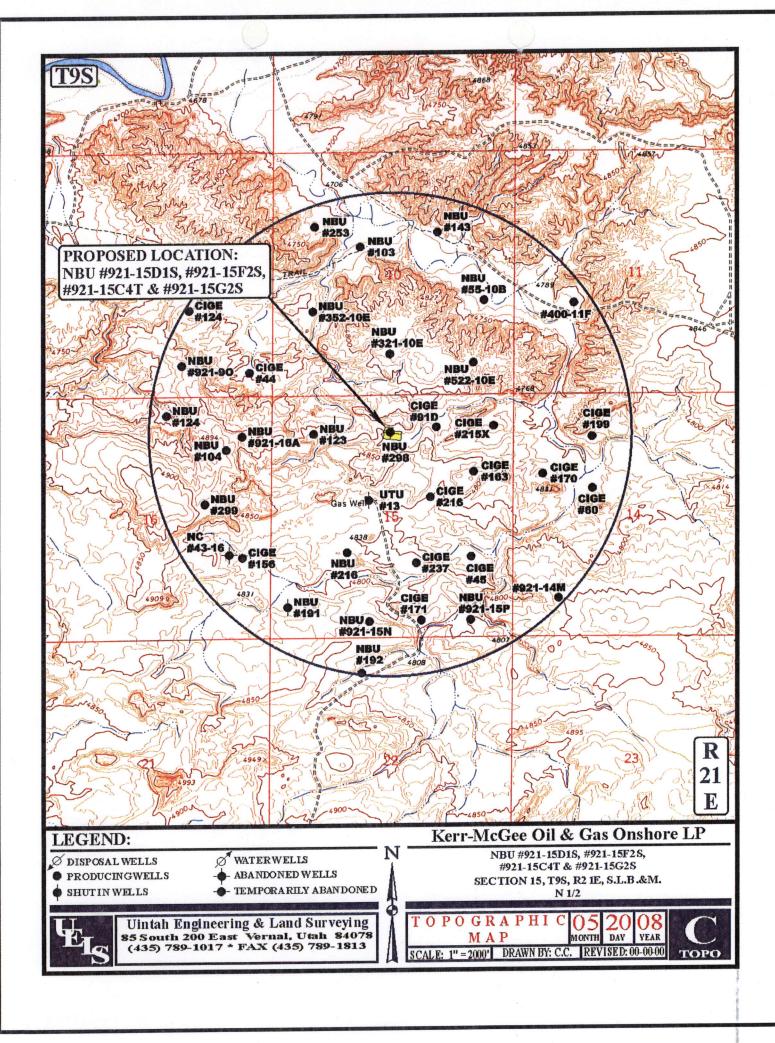
DRILLING MANAGER

TITLE



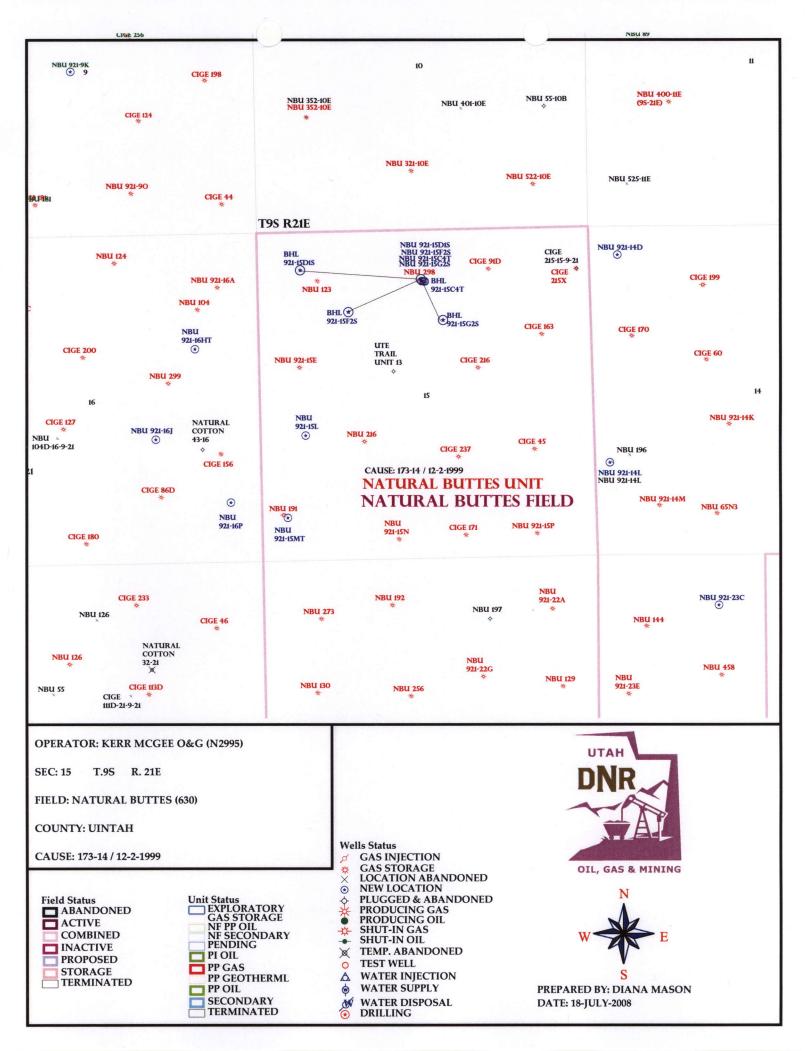






# WORKSHEET APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 07/15/2008	API NO. ASSIGNED: 43-047-40236					
WELL NAME: NBU 921-15G2S  OPERATOR: KERR-MCGEE OIL & GAS ( N2995 )  CONTACT: KEVIN MCINTYRE						
PROPOSED LOCATION:	INSPECT LOCATN BY: / /					
NWNE 15 090S 210E	Tech Review Initials Date					
SURFACE: 0838 FNL 2631 FEL BOTTOM: 1463 FNL 2355 FEL	Engineering					
COUNTY: UINTAH	Geology					
LATITUDE: 40.04106 LONGITUDE: -109.5371  UTM SURF EASTINGS: 624800 NORTHINGS: 44333	Surface					
FIELD NAME: NATURAL BUTTES (630  LEASE TYPE: 1 - Federal  LEASE NUMBER: UTU-01188  SURFACE OWNER: 2 - Indian	PROPOSED FORMATION: WSMVD COALBED METHANE WELL? NO					
Plat  Bond: Fed[1] Ind[] Sta[] Fee[]  (No. RLB0005239  Potash (Y/N)  Oil Shale 190-5 (B) or 190-3 or 190-13  Water Permit  (No. 43-8496  Al RDCC Review (Y/N)  (Date:  Date:  NM Fee Surf Agreement (Y/N)  Intent to Commingle (Y/N)	LOCATION AND SITING: R649-2-3.  Unit: NATURAL BUTTES R649-3-2. General Siting: 460 From Qtr/Qtr & 920' Between Wells R649-3-3. Exception Drilling Unit Board Cause No:/7314 Eff Date:/22/49/9 Siting: 460 From Qtr/Qtr & 920' Between Wells R649-3-11. Directional Drill					
STIPULATIONS:  STIPULATIONS:  2- CIL	ex file  prove  Since					



# **United States Department of the Interior**

#### BUREAU OF LAND MANAGEMENT

Utah State Office P.O. Box 45155 Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

July 18, 2008

#### Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2008 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2008 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ Wasatch/MesaVerde)

43-047-40234 NBU 921-15F2S Sec 15 T09S R21E 0834 FNL 2620 FWL BHL Sec 15 T09S R21E 1306 FNL 1427 FWL

43-047-40235 NBU 921-15D1S Sec 15 T09S R21E 0832 FNL 2600 FWL BHL Sec 15 T09S R21E 0621 FNL 0671 FWL

43-047-40236 NBU 921-15G2S Sec 15 T09S R21E 0838 FNL 2631 FEL BHL Sec 15 T09S R21E 1463 FNL 2355 FEL

43-047-40237 NBU 921-15C4T Sec 15 T09S R21E 0836 FNL 2640 FWL BHL Sec 15 T09S R21E 0801 FNL 2590 FWL

This office has no objection to permitting the wells at this time.

/s/ Michael L. Coulthard

bcc: File - Natural Buttes Unit
 Division of Oil Gas and Mining
 Central Files
 Agr. Sec. Chron
 Fluid Chron

MCoulthard:mc:7-18-08



Kerr-McGee Oil & Gas Onshore LP 1999 Broadway, Suite 3700 Denver. CO 80205

July 15, 2008

Mrs. Diana Mason Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11

NBU 921-15G2S

T9S-R21E

Section 15: SWNE

Surface: 838' FNL, 2631' FWL Bottom Hole: 1463' FNL, 2355' FEL

Uintah County, Utah

Dear Mrs. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to the Exception to Location and Siting of Wells.

- Kerr-McGee's NBU 921-15G2S is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating
  the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to
  utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

Therefore, based on the above stated information Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Jason K/Rayburn

RECEIVED

JUL 2 2 2008

DIV. OF OIL, GAS & MINING



GARY R. HERBERT Lieutenant Governor

# State of Utah DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

July 31, 2008

Kerr-McGee Oil & Gas Onshore, LP P O Box 173779 Denver, CO 80217-3779

Re:

NBU 921-15G2S Well, Surface Location 838' FNL, 2631' FEL, NW NE, Sec. 15, T. 9 South, R. 21 East, Bottom Location 1463' FNL, 2355' FEL, SW NE, Sec. 15, T. 9 South, R. 21 East, Uintah County, Utah

#### Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 *et seq.*, Utah Administrative Code R649-3-1 *et seq.*, and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-047-40236.

Sincerely,

Gil Hunt

**Associate Director** 

pab Enclosures

cc:

**Uintah County Assessor** 

Bureau of Land Management, Vernal Office



<b>Operator:</b>	Kerr-McGee Oil & Gas Onshore, LP				
Well Name & Number	NBU 921-15G2S				
API Number:	43-047-				
Lease:	UTU-0	1188			
Surface Location: NW NE  Bottom Location: SW NE	Sec. 15 Sec. 15	<b>T.</b> 9 South <b>T.</b> 9 South	R. 21 East R. 21 East		

#### **Conditions of Approval**

#### 1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

#### 2. Notification Requirements

Notify the Division with 24 hours of spudding the well.

• Contact Carol Daniels at (801) 538-5284.

Notify the Division prior to commencing operations to plug and abandon the well.

• Contact Dustin Doucet at (801) 538-5281 office (801) 733-0983 home

#### 3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

- 4. State approval of this well does not supersede the required federal approval, which must be obtained prior to drilling.
- 5. In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.
- 6 In accordance with Order in Cause No. 190-5(b) dated October 28, 1982, the Operator shall comply with requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operator shall ensure that the surface and/or production casing is properly cemented over the entire oil shale interval as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the Division.

Form 3160-5 (August, 2007)

#### **UNITED STATES** DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

FORM APPROVED

Expires: July 31, 2010

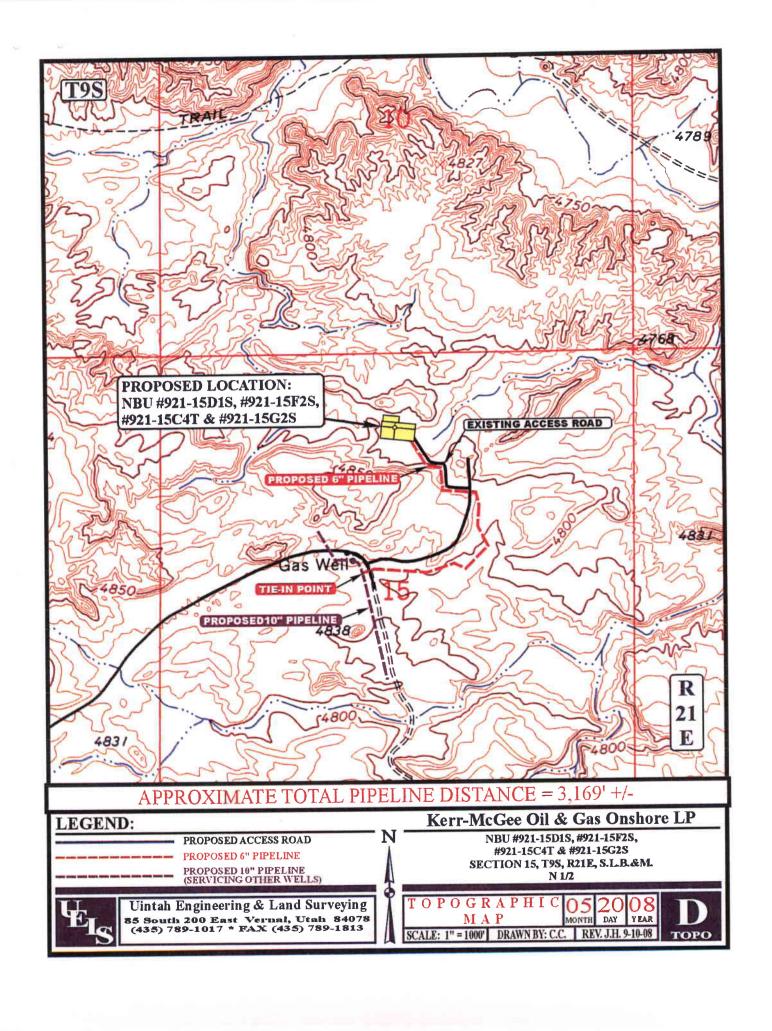
SUNDRY NOTICES AND REPORTS ON WELLS					UTU-01188
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.					ottee, or Tribe Name Ute Tribe
SUBMIT	IN TRIPLICATE - Other	Instructions on re	verse side.		. Agreement Name and/or No.
1. Type of Well					891008900A
Oil Well X Gas Well	Other			8. Well Name a	nd No.
2. Name of Operator				NBU	921-15G2S
Kerr-McGee Oil & Gas Ons	shore, LP			9. API Well No	•
3a. Address		3b. Phone No. (inch	ude area code)	4	13-047-40236
P.O. Box 173779, Der	rver, CO 80217-3779	720.93	29.6226	10. Field and Po	ool, or Exploratory Area
4. Location of Well (Footage, Sec., T.	, R., M., or Survey Description)				Natural Buttes
NW NE Sec. 15	T 9S R 21E			11. County or P	arish, State
838 FNL 2631	FEL				Uintah
12. CHECK APPROF	PRIATE BOX(S) TO INDIC	ATE NATURE OF	NOTICE, REPOR	RT, OR OTHE	R DATA
TYPE OF SUBMISSION		TY	PE OF ACTION		
X Notice of Intent	Acidize	Deepen	Production ( S	start/ Resume)	Water Shut-off
	Altering Casing	Fracture Treat	Reclamation		Well Integrity
Subsequent Report	Casing Repair	New Construction	Recomplete		Other
	X Change Plans	Plug and abandon	Temporarily A	Abandon	
Final Abandonment Notice	Convert to Injection	Plug back	Water Dispos	al	
13. Describe Proposed or Completed C	peration (clearly state all pertinent d	etails including estimated	starting date of any pro	posed work and a	pproximate duration thereof.

If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths or pertinent markers and sands. Attach the Bond under which the work will performed or provide the Bond No. on file with the BLM/ BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection.)

Kerr-McGee Oil & Gas Onshore, LP, respectfully submits the following revised TOPO D for NBU 921-15G2S, per the conditions of the tribal onsite.

14. I hereby certify that the foregoing is true and correct.			
Name (Printed/ Typed)			
Kevin McIntyre	tle	Regulatory Analyst	
Signature L Da	Date 10/7/08		
THIS SPACE FOR FEDER	RAL OR STATE OFFIC	E USE	
Approved by	Title	Date	
Conditions of approval, if any are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office		
			الراز الرابط

Title 18 U.S.C. Section 1001 AND Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any department or agency of the English English. States any false, fictitiousor fraudulent statements or representations as to any matter within its jurisdiction.



	STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES		FORM 9		
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-01188				
SUNDI	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE				
	sals to drill new wells, significantly deepen ex ugged wells, or to drill horizontal laterals. Use		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-15G2S		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047402360000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	Street, Suite 600, Denver, CO, 80217 3779	<b>PHONE NUMBER:</b> 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES		
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0838 FNL 2631 FEL			COUNTY: UINTAH		
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NWNE Section: 15	IP, RANGE, MERIDIAN: 5 Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH		
CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA		
TYPE OF SUBMISSION		TYPE OF ACTION			
,	_ ACIDIZE _	ALTER CASING	CASING REPAIR		
✓ NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME		
7/24/2009	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE		
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION		
	OPERATOR CHANGE	PLUG AND ABANDON	☐ PLUG BACK		
SPUD REPORT	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION		
Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON		
	☐ TUBING REPAIR	VENT OR FLARE	☐ WATER DISPOSAL		
DRILLING REPORT Report Date:	WATER SHUTOFF	SI TA STATUS EXTENSION	✓ APD EXTENSION		
	WILDCAT WELL DETERMINATION	OTHER	OTHER:		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.  Approved by the Utah Division of Oil, Gas and Mining  Date: July 23, 2009					
NAME (PLEASE PRINT) Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	TITLE Regulatory Analyst			
SIGNATURE N/A		<b>DATE</b> 7/21/2009			



#### The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

#### Request for Permit Extension Validation Well Number 43047402360000

**API:** 43047402360000 **Well Name:** NBU 921-15G2S

Location: 0838 FNL 2631 FEL QTR NWNE SEC 15 TWNP 090S RNG 210E MER S

**Company Permit Issued to:** KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued:** 7/31/2008

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision. Following is a checklist of some items related to the application, which should be verified.

ire revision. Following is a checklist of some items related to the application, which should be verified.
<ul> <li>If located on private land, has the ownership changed, if so, has the surface agreement been updated?</li> <li>Yes</li> <li>No</li> </ul>
<ul> <li>Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes</li> <li>No</li> </ul>
• Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well?  Yes No
<ul> <li>Have there been any changes to the access route including ownership, or rightof- way, which could affect the proposed location? Yes No</li> </ul>
• Has the approved source of water for drilling changed?   Yes  No
<ul> <li>Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation?</li> <li>Yes</li> <li>No</li> </ul>
• Is bonding still in place, which covers this proposed well?   Yes   Oil, Gas and Mining

**Signature:** Danielle Piernot **Date:** 7/21/2009

Title: Regulatory Analyst Representing: KERR-MCGEE OIL & GAS ONSHOR July 23, 2009

Bv:

STATE OF UTAH			FORM 9		
	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MIN		5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-01188		
SUNDF	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE				
	sals to drill new wells, significantly deepen ıgged wells, or to drill horizontal laterals. L		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-15G2S		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047402360000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	<b>PHO</b> treet, Suite 600, Denver, CO, 80217 3779	<b>NE NUMBER:</b> 720 929-6007 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES		
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0838 FNL 2631 FEL QTR/QTR, SECTION, TOWNSHI	P RANGE MERIDIAN		COUNTY: UINTAH		
	Township: 09.0S Range: 21.0E Meridian:	S	STATE: UTAH		
11.	CK APPROPRIATE BOXES TO INDICAT	TE NATURE OF NOTICE, REPORT,	OR OTHER DATA		
TYPE OF SUBMISSION		TYPE OF ACTION			
	☐ ACIDIZE	☐ ALTER CASING	CASING REPAIR		
NOTICE OF INTENT Approximate date work will start: 8/3/2010	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	CHANGE WELL NAME		
0/3/2010	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE		
SUBSEQUENT REPORT Date of Work Completion:	L DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION		
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK		
SPUD REPORT	☐ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION		
Date of Spud:	☐ REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON		
	L TUBING REPAIR	VENT OR FLARE	WATER DISPOSAL		
DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	✓ APD EXTENSION		
	☐ WILDCAT WELL DETERMINATION	☐ OTHER	OTHER:		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  Kerr-McGee Oil & Gas Onshore, L.P. (Kerr-McGee) respectfully requests an extension to this APD for the maximum time allowed. Please contact the undersigned with any questions and/or comments. Thank you.  Utah Division of Oil, Gas and Mining  Date: August 03, 2010					
By: Dally III					
			<i>m</i>		
NAME (PLEASE PRINT) Danielle Piernot	<b>PHONE NUMBER</b> 720 929-6156	TITLE Regulatory Analyst			
SIGNATURE N/A		<b>DATE</b> 8/3/2010			



#### The Utah Division of Oil, Gas, and Mining

- State of Utah
- Department of Natural Resources

**Electronic Permitting System - Sundry Notices** 

#### Request for Permit Extension Validation Well Number 43047402360000

**API:** 43047402360000 Well Name: NBU 921-15G2S

Location: 0838 FNL 2631 FEL QTR NWNE SEC 15 TWNP 090S RNG 210E MER S

Company Permit Issued to: KERR-MCGEE OIL & GAS ONSHORE, L.P.

**Date Original Permit Issued:** 7/31/2008

The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that requ

informat iire revi	tion as submitted sion. Following is	in the previous a checklist of se	ly approved applicat ome items related to	ion to drill, remai the application,	ns valid and does not which should be verified.
	ated on private la ed? 🔵 Yes 🍺	nd, has the own No	ership changed, if s	o, has the surface	agreement been
	any wells been dr requirements for			well which would	affect the spacing or
	here been any uni s proposed well?			hat could affect t	he permitting or operation
	there been any character the proposed loc			ownership, or rig	ghtof- way, which could
• Has th	ne approved sour	ce of water for o	Irilling changed? 🔵	Yes 📵 No	
			to the surface locati sed at the onsite eva		e which will require a No
• Is bor	nding still in place	e, which covers	this proposed well?	Yes No	Approved by the Utah Division of il, Gas and Mining
nature:	Danielle Piernot	Date:	8/3/2010		
Title:	Regulatory Analys	t Representing:	KERR-MCGEE OIL & G	GAS ONSHOR	August 03, 2010

Sign

## RECEIVED

JUL 1 6 2008

### RECEIVED

Form 3160-3 (August 2007)

NOV 2 3 2010

FORM APPROVED OMB NO. 1004-0137

**UNITED STATES** DEPARTMENT OF THE INTERIOR

Expires: July 31, 2010 Lease Serial No.

	BUREAU OF LAND MAN APPLICATION FOR PERMIT TO				6	UTU 01188  If Indian, Allottee or Trib	e Name	
						Ute Tribe		
1a	Type of Work: X DRILL	JDEEN!	FED		7	. If Unit or CA Agreement	, Name and No.	
	1a. Type of Work: X DRILL REENTER			-	891008900A  Lease Name and Well No			
	Type of Well: Oil Well X Gas Well Other		Single Zone X M	ultiple Zo		NBU 921-15G2S	o.	
2.	Name of Operator				9	. API Well No.		
	Kerr-McGee Oil & Gas On	shore, LF				43-047-40236		
3a.	Address	3b. Ph	one No. <i>(include area cod</i>	de)	10	). Field and Pool, or Explor	atory	
	PO Box 173779		Danielle Pierno		1	Natural Buttes Field		
	Denver, CO 80217-3779		720-929-6156					
4.	Location of well (Report location clearly and In accordance with	any State	e requirements.*) NA.	D 83	11	. Sec.,T.,R.,M.,or Blk.:	and Survey or Are	
	At surface 838' FNL 2,631' FWL NE/4 NW/4 Lat.	40	0.041078 Long.	-109.53	7844	15 T 98 R 2	le S.L.B.&M.	
	At proposed prod. zone 1,463' FNL 2,355' FEL		SW/4 NE/4 Sec. 15 T9S	R21E				
14.	Distance in miles and direction from the nearest town or post offic	e*			12	. County or Parish	13. State	
	Approximately 13 miles southeast of Ouray, Utah				'-	ř		
1.7						Uintah	Utah	
15.	Distance from proposed* location to nearest		16. No. of acres in leas	е	17. Spacin	g Unit dedicated to this wel	1	
	property or lease line, ft.		880.00		T T id	Unit well		
	(Also to nearest drlg. unit line, if any)		880.00		Unit	wen		
18.	Distance from proposed location*		19. Proposed Depth		20 BIM/	BIA Bond No. on file		
	to nearest well, drilling, completed, ±50'		· ·					
	applied for, on this lease, ft.		10,178' MD		WY	B000291		
21.	Elevations (Show whether DF. RT, GR, etc.)		22. Aproximate date we	ork will st	art*	23. Estimated duration		
	4,792 ' Ungraded Ground Level	КВ	Upon Approval			60-90 days		
			24. Attachments					
The	following, completed in accordance with the requirements of Onsh	ore Oil a	nd Gas Order No. 1 shall	be attache	ed to this for	m:		
1.	Well plat certified by a registered surveyor.		4. Bond to co	ver the op	erations unl	ess covered by existing bone	d on file(see	
	A Drilling Plan.		item 20 abo	ove).				
3.	A Surface Use Plan (if the location is on National Forest System L	ands, the						
	SUPO shall be filed with the appropriate Forest Service Office).				fic informati	on and/ or plans as may be	required by the a	
			authorized	officer.				
25.	Signature	Name (.	Printed/ Typed)			Date		
	Danelle Punul			Da	anielle Piern	ot	November 22, 2010	
Title		<del></del>	E-1	mail:		lanielle.piernot@anad	arko com	
	Regulatory Analyst I			one:	•	720-929-6156	urko.com	
Appi	roved By (Signature)	Name (	Printed/Typed)			IData #	SEA A 2000	
	Alle War	See See	ames H.	Sp	arge	Date	DEC 0 1 2010	
Γitle	Acting Assistant Field Manager Lands & Mineral Resources	Office	VERNAL	FIEL	OFFIC	E		
Appl	lication approval does not warrant or certify that the applicant h	olds lea					atitle the applicant to an '	
					յ ու այ <b>⊂ Տ</b> ԱԼ	you lease willest would es	itue the applicant to conduct	
•	litions of approval, if any, are attached. CONDITIONS	uf af	PROVAL ATTAC	NEU				

Conditions of approval, if any, are attached.

DEC 0 9 2010

States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make a moderate property of the United



# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT VERNAL FIELD OFFICE

VERNAL FIELD OFFICE VERNAL, UT 84078

(435) 781-4400



#### CONDITIONS OF APPROVAL FOR APPLICATION FOR PERMIT TO DRILL

Company: Kerr M

Kerr McGee Oil & Gas Onshore, LP

Location:

NWNE, Sec. 15, T9S, R21E (S)

SWNE, Sec. 15, T9S, R21E (B)

Well No:

NBU 921-15G2S

Lease No:

UTU-01188

API No:

43-047-40236

Agreement:

**Natural Buttes Unit** 

OFFICE NUMBER:

(435) 781-4400

OFFICE FAX NUMBER: (435) 781-3420

### A COPY OF THESE CONDITIONS SHALL BE FURNISHED TO YOUR FIELD REPRESENTATIVE TO INSURE COMPLIANCE

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (43 CFR Part 3160), and this approved Application for Permit to Drill including Surface and Downhole Conditions of Approval. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling, and completion operations. This permit is approved for a two (2) year period, or until lease expiration, whichever occurs first. An additional extension, up to two (2) years, may be applied for by sundry notice prior to expiration.

#### NOTIFICATION REQUIREMENTS

Construction Activity	-	The Ute Tribe Energy &
(Notify Ute Tribe Energy & Minerals Dept.		Environmental Scientist
and BLM Environmental Scientist)		advance of any construc-
		open Monday through T
	!	

- The Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist shall be notified at least 48 hours in advance of any construction activity. The Ute Tribal office is open Monday through Thursday.

Construction Completion (Notify Ute Tribe Energy & Minerals Dept. and BLM Environmental Scientist) Upon completion of the pertinent APD/ROW construction, notify the Ute Tribe Energy & Minerals Dept. for a Tribal Technician to verify the Affidavit of Completion. Notify the BLM Environmental Scientist prior to moving on the drilling rig.

Spud Notice (Notify BLM Petroleum Engineer)

Twenty-Four (24) hours prior to spudding the well.

Casing String & Cementing (Notify BLM Supv. Petroleum Tech.)

Twenty-Four (24) hours prior to running casing and cementing all casing strings to: <u>ut\_vn\_opreport@blm.gov</u>.

BOP & Related Equipment Tests (Notify BLM Supv. Petroleum Tech.)

Twenty-Four (24) hours prior to initiating pressure tests.

First Production Notice (Notify BLM Petroleum Engineer)

Within Five (5) business days after new well begins or production resumes after well has been off production for more than ninety (90) days.

Page 2 of 8 Well: NBU 921-15G2S 12/6/2010

### SURFACE USE PROGRAM CONDITIONS OF APPROVAL (COAs)

#### **Site-Specific Conditions of Approval:**

- 1. Paint old and new facilities "Shadow Gray."
- 2. Move the existing pipeline off the damage area of the well pad.
- 3. Monitor constructions operations by a permitted paleontologist.
- 4. Monitor constructions operations by a permitted archaeologist.
- 5. In accordance with the guidelines specified in the Utah BLM Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002, a raptor survey shall be conducted prior to expansion of the well pad or pipeline upgrade if construction will take place during raptor nesting season (January 01 through September 30). If active raptor nests are identified during a new survey, KMG shall conduct its operations according to the seasonal restrictions detailed in the Uintah Basin-specific RMP guidelines and spatial offsets specified by the USFWS Utah Raptor Guidelines (see Appendix D).
- 6. If project construction operations are not initiated before November 3, 2010, KMG shall conduct additional biological surveys in accordance with the guidelines specified in the USFWS Rare Plant Conservation Measures for Uinta Basin hookless cactus (See Appendix D) and conduct its operation according to its specifications.

#### **BIA Standard Conditions of Approval:**

- 1. Soil erosion will be mitigated by reseeding all disturbed areas.
- 2. The gathering pipelines will be constructed to lie on the surface. The surface pipelines will not be bladed or cleared of vegetation. Where pipelines are constructed parallel to roads they may be welded on the road and then lifted from the road onto the right-of-way. Where pipelines do not parallel roads but cross-country between sites, they shall be welded in place at well sites or on access roads and then pulled between stations with a suitable piece of equipment. Traffic will be restricted along these areas so that the pipeline right-of-way will not be used as an access road.
- 3. An open drilling system shall be used, unless otherwise specified in 10.0 Additional Stipulations of this document and in the Application for Permit to Drill. A closed drilling system shall be used in all flood plain areas, and other highly sensitive areas, recommended by the Ute Tribe Technician, BIA, and other agencies involved.
- 4. The reserve pit shall be lined with a synthetic leak proof liner. After the drilling operation is complete, excess fluids shall be removed from the reserve pit and either hauled to an approved disposal site or shall be used to drill other wells. When the fluids are removed the pit shall be backfilled a minimum of 3.0' below the soil surface elevation.
- 5. A closed production system shall be used. This means all produced water and oil field fluid wastes shall be contained in leak proof tanks. These fluids shall be disposed of in either approved injection wells or disposal pits.
- 6. Major low water crossings will be armored with pit run material to protect them from erosion.
- 7. All personnel shall refrain from collecting any paleontological fossils and from disturbing any fossil resources in the area.

Page 3 of 8 Well: NBU 921-15G2S 12/6/2010

- 8. If fossils are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.
- 9. Before the site is abandoned the company will be required to restore the right-of-way to near its original state. The disturbed area will be reseeded with desirable perennial vegetation. If necessary, the Bureau of Indian Affairs or Bureau of Land Management will provide a suitable seed mixture.
- 10. Noxious weeds will be controlled on all surface disturbances within the project area. If noxious weeds spread from the project area onto adjoining land, the company will also be responsible for their control.
- 11. If project construction operations are scheduled to occur after December 31, 2009, KMG shall conduct annual raptor surveys in accordance with the guidelines specified in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, 2002 (See Appendix E) and conduct its operations according to applicable seasonal restrictions and spatial offsets.
- 12. USFWS threatened and endangered plant and animal conservation measures will be followed, as appropriate to the species identified by the biological resource survey (See Appendix E).
- 13. All personnel shall refrain from collecting artifacts and from disturbing any significant cultural resources in the area.
- 14. If artifacts or any culturally sensitive materials are exposed or identified during construction, all construction must cease and immediate notification to the Energy and Minerals Department and the Cultural Rights Protection Officer.

Page 4 of 8 Well: NBU 921-15G2S 12/6/2010

### DOWNHOLE PROGRAM CONDITIONS OF APPROVAL (COAs)

#### SITE SPECIFIC DOWNHOLE COAs:

- 1. A copy of Kerr McGee's Standard Operating Practices (dated 7/17/08 and approved 7/28/08) shall be on location.
- 2. Kerr McGee and their contractors shall strictly adhere to all operating practices in the SOP along with all Oil and Gas rules and requirements listed in the Code of Federal Regulations and all Federal Onshore Oil and Gas Orders except where variances have been granted.

All provisions outlined in Onshore Oil & Gas Order #2 Drilling Operations shall be strictly adhered to. The following items are emphasized:

#### DRILLING/COMPLETION/PRODUCING OPERATING STANDARDS

- The spud date and time shall be reported orally to Vernal Field Office within 24 hours of spudding.
- Notify Vernal Field Office Supervisory Petroleum Engineering Technician at least 24 hours in advance of casing cementing operations and BOPE & casing pressure tests.
- All requirements listed in Onshore Order #2 III. E. Special Drilling Operations are applicable for air drilling of surface hole.
- Blowout prevention equipment (BOPE) shall remain in use until the well is completed or abandoned. Closing unit controls shall remain unobstructed and readily accessible at all times. Choke manifolds shall be located outside of the rig substructure.
- All BOPE components shall be inspected daily and those inspections shall be recorded in the daily drilling report. Components shall be operated and tested as required by Onshore Oil & Gas Order No. 2 to insure good mechanical working order. All BOPE pressure tests shall be performed by a test pump with a chart recorder and **NOT** by the rig pumps. Test shall be reported in the driller's log.
- BOP drills shall be initially conducted by each drilling crew within 24 hours of drilling out from under the surface casing and weekly thereafter as specified in Onshore Oil & Gas Order No. 2.
- Casing pressure tests are required before drilling out from under all casing strings set and cemented in place.
- No aggressive/fresh hard-banded drill pipe shall be used within casing.
- Cement baskets shall not be run on surface casing.

Page 5 of 8 Well: NBU 921-15G2S 12/6/2010

- The operator must report all shows of water or water-bearing sands to the BLM. If flowing water is encountered it must be sampled, analyzed, and a copy of the analyses submitted to the BLM Vernal Field Office.
- The operator must report encounters of all non oil & gas mineral resources (such as Gilsonite, tar sands, oil shale, trona, etc.) to the Vernal Field Office, in writing, within 5 working days of each encounter. Each report shall include the well name/number, well location, date and depth (from KB or GL) of encounter, vertical footage of the encounter and, the name of the person making the report (along with a telephone number) should the BLM need to obtain additional information.
- A complete set of angular deviation and directional surveys of a directional well will be submitted to the Vernal BLM office engineer within 30 days of the completion of the well.
- While actively drilling, chronologic drilling progress reports shall be filed directly with the BLM, Vernal Field Office on a weekly basis in sundry, letter format or e-mail to the Petroleum Engineers until the well is completed.
- A cement bond log (CBL) will be run from the production casing shoe to the <u>top of cement</u> and shall be utilized to determine the bond quality for the production casing. Submit a field copy of the CBL to this office.
- Please submit an electronic copy of all other logs run on this well in LAS format to UT\_VN\_Welllogs@BLM.gov. This submission will supersede the requirement for submittal of paper logs to the BLM.
- There shall be no deviation from the proposed drilling, completion, and/or workover program as approved. Safe drilling and operating practices must be observed. Any changes in operation must have prior approval from the BLM Vernal Field Office.

Page 6 of 8 Well: NBU 921-15G2S 12/6/2010

#### **OPERATING REQUIREMENT REMINDERS:**

- All wells, whether drilling, producing, suspended, or abandoned, shall be identified in accordance with 43 CFR 3162.6. There shall be a sign or marker with the name of the operator, lease serial number, well number, and surveyed description of the well.
- In accordance with 43 CFR 3162.4-3, this well shall be reported on the "Monthly Report of Operations" (Oil and Gas Operations Report ((OGOR)) starting with the month in which operations commence and continue each month until the well is physically plugged and abandoned. This report shall be filed in duplicate, directly with the Minerals Management Service, P.O. Box 17110, Denver, Colorado 80217-0110, or call 1-800-525-7922 (303) 231-3650 for reporting information.
- Should the well be successfully completed for production, the BLM Vernal Field office must be notified when it is placed in a producing status. Such notification will be by written communication and must be received in this office by not later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following informational items:
  - Operator name, address, and telephone number.
  - o Well name and number.
  - o Well location (1/41/4, Sec., Twn, Rng, and P.M.).
  - O Date well was placed in a producing status (date of first production for which royalty will be paid).
  - o The nature of the well's production, (i.e., crude oil, or crude oil and casing head gas, or natural gas and entrained liquid hydrocarbons).
  - o The Federal or Indian lease prefix and number on which the well is located; otherwise the non-Federal or non-Indian land category, i.e., State or private.
  - o Unit agreement and/or participating area name and number, if applicable.
  - o Communitization agreement number, if applicable.
- Any venting or flaring of gas shall be done in accordance with Notice to Lessees (NTL) 4A and needs prior approval from the BLM Vernal Field Office.
- All undesirable events (fires, accidents, blowouts, spills, discharges) as specified in NTL 3A will be reported to the BLM, Vernal Field Office. Major events, as defined in NTL3A, shall be reported verbally within 24 hours, followed by a written report within 15 days. "Other than Major Events" will be reported in writing within 15 days. "Minor Events" will be reported on the Monthly Report of Operations and Production.

Page 7 of 8 Well: NBU 921-15G2S 12/6/2010

- Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (BLM Form 3160-4) shall be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with 43 CFR 3162.4-1. Two copies of all logs run, core descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations, shall be filed on BLM Form 3160-4. Submit with the well completion report a geologic report including, at a minimum, formation tops, and a summary and conclusions. Also include deviation surveys, sample descriptions, strip logs, core data, drill stem test data, and results of production tests if performed. Samples (cuttings, fluid, and/or gas) shall be submitted only when requested by the BLM, Vernal Field Office.
- All off-lease storage, off-lease measurement, or commingling on-lease or off-lease, shall have prior written approval from the BLM Vernal Field Office.
- Oil and gas meters shall be calibrated in place prior to any deliveries. The BLM Vernal Field Office Petroleum Engineers will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports shall be submitted to the BLM Vernal Field Office. All measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standards for natural gas measurement. All measurement points shall be identified as the point of sale or allocation for royalty purposes.
- A schematic facilities diagram as required by Onshore Oil & Gas Order No. 3 shall be submitted to the BLM Vernal Field Office within 30 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Oil & Gas Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with Onshore Oil & Gas Order No. 3.
- Any additional construction, reconstruction, or alterations of facilities, including roads, gathering lines, batteries, etc., which will result in the disturbance of new ground, shall require the filing of a suitable plan and need prior approval of the BLM Vernal Field Office. Emergency approval may be obtained orally, but such approval does not waive the written report requirement.
- No location shall be constructed or moved, no well shall be plugged, and no drilling or workover
  equipment shall be removed from a well to be placed in a suspended status without prior
  approval of the BLM Vernal Field Office. If operations are to be suspended for more than 30
  days, prior approval of the BLM Vernal Field Office shall be obtained and notification given
  before resumption of operations.
- Pursuant to Onshore Oil & Gas Order No. 7, this is authorization for pit disposal of water produced from this well for a period of 90 days from the date of initial production. A permanent disposal method must be approved by this office and in operation prior to the end of this 90-day period. In order to meet this deadline, an application for the proposed permanent disposal method shall be submitted along with any necessary water analyses, as soon as possible, but no later than 45 days after the date of first production. Any method of disposal which has not been approved prior to the end of the authorized 90-day period will be considered as an Incident of Noncompliance and will be grounds for issuing a shut-in order until an acceptable manner for disposing of said water is provided and approved by this office.

Page 8 of 8 Well: NBU 921-15G2S 12/6/2010

• Unless the plugging is to take place immediately upon receipt of oral approval, the Field Office Petroleum Engineers must be notified at least 24 hours in advance of the plugging of the well, in order that a representative may witness plugging operations. If a well is suspended or abandoned, all pits must be fenced immediately until they are backfilled. The "Subsequent Report of Abandonment" (Form BLM 3160-5) must be submitted within 30 days after the actual plugging of the well bore, showing location of plugs, amount of cement in each, and amount of casing left in hole, and the current status of the surface restoration.

SUBMIT AS EMAIL

**Print Form** 

### **BLM - Vernal Field Office - Notification Form**

Oper	ator KERR-MCGEE OIL & GA	<u>S</u> Rig Name	3/# BOC	KETRIG
Subn	nitted By ANDY LYTLE	Phone Num	nber 720.	.929.6100
	Name/Number NBU 921-15G			
	Qtr <u>NENW</u> Section <u>15</u>		S R	Range 21F
_	e Serial Number <u>UO-01188</u>		· ·	go <u>= 1 =                                </u>
	Number <u>4304740236</u>			
VI I I	4304740230			
Spud	Notice – Spud is the initial	spudding of	f the we	ll. not drilling
	pelow a casing string.			,
out L	cion a casing samigi			
	Date/Time <u>06/08/2011</u>	14:00 HRS	AM 🔲	PM 🔲
<u>Casir</u>	<u>ng</u> – Please report time casi	ng run start	s, not c	ementing
times	S.			
$\checkmark$	Surface Casing			RECEIVED
	Intermediate Casing			JUN 08 2011
	Production Casing			
	Liner		יום	V. OF OIL, GAS & MINING
	Other			
	Date/Time <u>06/30/2011</u>	00:00 HRS	AM 🔲	PM 🗌
<b>BOP</b>	<u> </u>			
	Initial BOPE test at surface	casing poin	t	
	BOPE test at intermediate	casing point		
	30 day BOPE test	<b>.</b>		
	Other .			
	Date/Time		AM 🗌	PM
	-			<del></del>
Rem	arks estimated date and time. Plea	SE CONTACT KENNY	GATHINGS	AT
435.82	8.0986 OR LOVEL YOUNG AT 435.781.705	1		·

Sundry Number: 15742 API Well Number: 43047402360000

			FORM		
	STATE OF UTAH		FORM 9		
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-01188				
SUNDF	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE				
	sals to drill new wells, significantly deepen exis gged wells, or to drill horizontal laterals. Use A		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-15G2S		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047402360000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE N treet, Suite 600, Denver, CO, 80217 3779	UMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES		
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0838 FNL 2631 FEL			COUNTY: UINTAH		
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NWNE Section: 15	P, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH		
11. CHE	CK APPROPRIATE BOXES TO INDICATE N	ATURE OF NOTICE, REPORT,	OR OTHER DATA		
TYPE OF SUBMISSION		TYPE OF ACTION			
	ACIDIZE	ALTER CASING	CASING REPAIR		
☐ NOTICE OF INTENT	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME		
Approximate date work will start:	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE		
SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN ☐	FRACTURE TREAT	☐ NEW CONSTRUCTION		
Dute of from completions	☐ OPERATOR CHANGE ☐	PLUG AND ABANDON	☐ PLUG BACK		
✓ SPUD REPORT	☐ PRODUCTION START OR RESUME ☐	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION		
Date of Spud: 6/8/2011	☐ REPERFORATE CURRENT FORMATION ☐	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON		
0/6/2011	☐ TUBING REPAIR ☐	VENT OR FLARE	☐ WATER DISPOSAL		
DRILLING REPORT Report Date:	□ WATER SHUTOFF □	SI TA STATUS EXTENSION	APD EXTENSION		
Report Date:	☐ WILDCAT WELL DETERMINATION ☐	OTHER	OTHER:		
			<u>,                                    </u>		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'.  RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL ON  06/08/2011 AT 0830 HRS.  Accepted by the  Utah Division of  Oil, Gas and Mining  FOR RECORD ONLY					
NAME (PLEASE PRINT) Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	TITLE Regulatory Analyst			
SIGNATURE N/A		<b>DATE</b> 6/9/2011			

Sundry Number: 16159 API Well Number: 43047402360000

			FORM 9		
	STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES		TORMS		
	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-01188				
	RY NOTICES AND REPORTS	_	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE		
	sals to drill new wells, significantly deepen e igged wells, or to drill horizontal laterals. Us		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES		
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-15G2S		
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047402360000		
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHON treet, Suite 600, Denver, CO, 80217 3779	<b>E NUMBER:</b> 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES		
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0838 FNL 2631 FEL			COUNTY: UINTAH		
QTR/QTR, SECTION, TOWNSHI	(P, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH		
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA		
TYPE OF SUBMISSION		TYPE OF ACTION			
	ACIDIZE	ALTER CASING	CASING REPAIR		
☐ NOTICE OF INTENT	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME		
Approximate date work will start:	CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE		
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION		
Bute of Work completion:	OPERATOR CHANGE	PLUG AND ABANDON	☐ PLUG BACK		
_	PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION		
SPUD REPORT Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	TEMPORARY ABANDON		
	☐ TUBING REPAIR	VENT OR FLARE	☐ WATER DISPOSAL		
✓ DRILLING REPORT	□ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION		
Report Date: 6/23/2011	☐ WILDCAT WELL DETERMINATION				
		OTHER	OTHER:		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.  MIRU AIR RIG ON JUNE 21, 2011. DRILLED SURFACE HOLE TO 2920'. RAN  SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG.  DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION Accepted by the REPORT.  Utah Division of Oil, Gas and Mining  FOR RECORD ONLY					
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst			
SIGNATURE N/A		<b>DATE</b> 6/24/2011			

#### STATE OF UTAH **DEPARTMENT OF NATURAL RESOURCES** DIVISION OF OIL, GAS AND MINING

#### **ENTITY ACTION FORM**

Operator:

KERR McGEE OIL & GAS ONSHORE LP

Operator Account Number: N 2995

Address:

1368 SOUTH 1200 EAST

city VERNAL

zip 84078 state UT

Phone Number: (435) 781-7024

Well 1			MOM	<u> </u>			
API Number	Well	Name	QQ	Sec	Twp	Rng	County
4304740236	NBU 921-15G2S		NENW	15	98	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	s	pud Da	te	•	ty Assignment fective Date
B	99999	2900		6/8/201	1	6/	22/11
Commente:		1195400	1/1		•		7

MINIT

MIRU PETE MARTIN BUCKET RIG.  $U\supset \mathcal{M}VD$ 

BAL-SWHE SPUD WELL ON 06/08/2011 AT 0830 HRS.

Well 2

API Number	Well	Name	QQ	QQ Sec Tv		p Rng Cou		
4304740337	NBU 921-15C4S	NBU 921-15C4S				21E	UINTAH	
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignmen Effective Date		
$\overline{\mathcal{B}}$	99999	2900		6/8/201	1	6	122/11	
Comments: MIRI	U PETE MARTIN BUCK D WELL ON 06/08/2011	ET RIG. WSM	VB 3HL=	NE	4W	<u> </u>		

Well 3

API Number	Well	Name	QQ	Sec	Twp	Rng	County
4304740252	NBU 921-15C2S	NBU 921-15C2S				21E	UINTAH
Action Code	Current Entity Number	New Entity Number			Spud Date		ty Assignment fective Date
B	99999	2900 6/8/2011 6/22					
Comments: MIRI	J PETE MARTIN BUCK D WELL ON 06/08/2011	ETRIG. WSW		*****	-	<u> </u>	<u>aa/11</u>

#### **ACTION CODES:**

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- Re-assign well from one existing entity to a new entity

Title

Signature **REGULATORY ANALYST** 

SHEILA WOPSOCK

6/9/2011 Date

E - Other (Explain in 'comments' section)

RECEIVED

JUN 09 2011

(5/2000)

Sundry Number: 18402 API Well Number: 43047402360000

	STATE OF UTAH		FORM 9				
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MININ	IG	5.LEASE DESIGNATION AND SERIAL NUMBER: UTU-01188				
SUND	RY NOTICES AND REPORTS OF	N WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: UTE				
	sals to drill new wells, significantly deepen exisugged wells, or to drill horizontal laterals. Use <i>i</i>		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES				
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-15G2S				
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047402360000				
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE N Street, Suite 600, Denver, CO, 80217 3779	NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES				
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0838 FNL 2631 FEL			COUNTY: UINTAH				
QTR/QTR, SECTION, TOWNSH	IP, RANGE, MERIDIAN: 5 Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH				
11. CHE	CK APPROPRIATE BOXES TO INDICATE N	NATURE OF NOTICE, REPORT,	OR OTHER DATA				
TYPE OF SUBMISSION		TYPE OF ACTION					
ACIDIZE							
WELL IS WAITING	ON FINAL COMPLETION ACTIVITE REFURBISHED AND UTILIZED ASYSTEM.  SYSTEM.	TES. THE PIT ON THE	RECORD ONLY				
Andy Lytle  SIGNATURE	720 929-6100	Regulatory Analyst  DATE					
N/A		9/12/2011					

Sundry Number: 19832 API Well Number: 43047402360000

			FORM 9						
	STATE OF UTAH		TORM 9						
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING								
	SUNDRY NOTICES AND REPORTS ON WELLS								
	sals to drill new wells, significantly deepen exist gged wells, or to drill horizontal laterals. Use Af		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES						
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-15G2S						
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047402360000						
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE NU treet, Suite 600, Denver, CO, 80217 3779	JMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES						
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0838 FNL 2631 FEL			COUNTY: UINTAH						
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NWNE Section: 15	<b>P, RANGE, MERIDIAN:</b> Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH						
11. CHE	CK APPROPRIATE BOXES TO INDICATE NA	ATURE OF NOTICE, REPORT,	OR OTHER DATA						
TYPE OF SUBMISSION		TYPE OF ACTION							
	☐ ACIDIZE ☐ A	ALTER CASING	☐ CASING REPAIR						
☐ NOTICE OF INTENT	☐ CHANGE TO PREVIOUS PLANS ☐ C	CHANGE TUBING	☐ CHANGE WELL NAME						
Approximate date work will start:	☐ CHANGE WELL STATUS ☐ C	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE						
SUBSEQUENT REPORT	□ DEEPEN □ F	RACTURE TREAT	□ NEW CONSTRUCTION						
Date of Work Completion:		PLUG AND ABANDON	☐ PLUG BACK						
		RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION						
SPUD REPORT Date of Spud:									
		SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON						
✓ DRILLING REPORT		/ENT OR FLARE	☐ WATER DISPOSAL						
Report Date: 10/27/2011	☐ WATER SHUTOFF ☐ S	SI TA STATUS EXTENSION	APD EXTENSION						
10/2//2011	□ WILDCAT WELL DETERMINATION □ C	OTHER	OTHER:						
THE SUBJECT WELL V	MPLETED OPERATIONS. Clearly show all pertinent WAS PLACED ON PRODUCTION O OGICAL WELL HISTORY WILL BE WELL COMPLETION REPORT.	N 10/27/2011 AT 1540 SUBMITTED WITH THE A U OII FOR							
NAME (PLEASE PRINT) Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	TITLE Regulatory Analyst							
SIGNATURE N/A		<b>DATE</b> 10/28/2011							

Form 3160-4 (August 2007)

#### UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED OMB No. 1004-0137 Expires: July 31, 2010

	WELL (	COMPL	ETION C	R REC	OMPL	ETIO	N REPO	ORT	AND LO	}			ease Serial JTU01188	No.	
la. Type of		Oil Well			Dry	Otl			D	D:00 D		6. If	Indian, All	ottee o	Tribe Name
b. Type o	f Completion	<b>⊠</b> N Othe	lew Well er	□ Work	Over	Dee	pen	Plug	Back 🗖	Diff. R	esvr.	7. U	nit or CA A	Agreem	ent Name and No.
2. Name of	Operator	& GAS	ONSHORE		Cont IME.SC	act: JAI	ME L. SC WSKE@/	HARI ANA[	NOWSKE DARKO.COM	1			ease Name IBU 921-1		ell No.
3. Address		73779						ne No	o. (include are			9. A	PI Well No		43-047-40236
4. Location	of Well (Re			d in accor	dance wi	th Feder	al requiren	nents)	)*			10. I	Field and P	ool, or l	Exploratory
At surfa			. 2631FEL 4		·				h. Hsm			11. 5	Sec., T., R.,	M., or	Block and Survey 9S R21E Mer SLB
At top p  At total	orod interval a	147	elow SWI 5 335 NL 2 <del>63</del> 1FE	ス					by HSM	•		12. (	County or F		13. State
14. Date Sp 06/08/2	oudded	NE OSO	15. Da	te T.D. R 07/2011		at, 100.	16.	Date D &	Completed	dy to Pi	od.		Elevations (	DF, KI 92 GL	3, RT, GL)*
18. Total D	epth:	MD TVD	10337 10278		9. Plug	Back T.I		ID VD	10273 10214		20. Dep	th Bri	dge Plug S		MD TVD
21. Type E CBL/VI	lectric & Oth DL/GR/CCL-	er Mechai BHV-SD	nical Logs R /DSN/ACTF	ın (Subm	it copy of	each)			22.	Was v Was I Direct	vell cored OST run? ional Sur	l? vey?	No No No No No No	Yes Yes	(Submit analysis) (Submit analysis) (Submit analysis)
23. Casing at	nd Liner Reco	ord (Repo	rt all strings										T		
Hole Size	Size/G	rade	Wt. (#/ft.)	Top (MD)		ttom ID)	Stage Cem Depth		No. of Sk Type of Ce		Slurry (BB		Cement	Тор*	Amount Pulled
20.000	<del></del>	000 STL	36.7			40				28 575	<u> </u>		<u> </u>	0	
12.250	·	25 J-55	40.0 11.6		0	2894 9636	,- <del></del>		.,	5/5 1657			<del> </del>	1190	
7.875 7.875	<del></del>	500 I-80 0 P-110	11.6	96		10317	·····			1037			<b> </b>	1130	
1.010	7.50	01-710	1.1.0	- 00		10011		-				***************************************			
24. Tubing	Record														
Size	Depth Set (M		acker Depth	(MD)	Size	Depth	Set (MD)	P	acker Depth (	MD)	Size	De	epth Set (M	D)	Packer Depth (MD)
2.375		9431				126.1	Saufauntiau	ation Record				<u> </u>			
25. Producii						20. 1			<del> </del>			٦.,		T	D. C. Ctatas
	ormation	TOU	Тор	7544	Bottom	1	Perfo	Perforated Interval Size 7514 TO 7821 0			0.30		No. Holes	OPE	Perf. Status
<u>A)</u>	WASA MESAVE		,	7514 8072	782 996				8072 TO 9		0.30	-		OPE	
B)	MESAVE	NDE		0072	330	1			0012100	-	0.0	~		0	
D)						1						$\neg$			
	acture, Treat	ment, Cer	nent Squeeze	, Etc.											
	Depth Interva								nount and Ty		aterial				
	75	14 TO 99	960 PUMP 6	,096 BBL	SLICK	120 & 1	16,078 LBS	30/5	OTTAWA SA	ND					
								-							
28 Producti	ion - Interval	A												····	
Date First	Test	Hours	Test	Oil	Gas		ater	Oil Gr		Gas		Product	tion Method		
Produced 10/27/2011	Date 10/31/2011	Tested 24	Production	BBL 0.0	MCF 178	An BE	548.0	Corr. A	API	Gravity			FI.O	NS FRO	OM WELL
10/2//2011 Choke	Tbg. Press.	Csg.	24 Hr.	Oil         Gas         Water         Gas:Oil         Well Status											
Size	Flwg. 1018	Press.	Rate	BBL 0	MCF 178	BI	3L 548	Ratio		۾ ا	ow				
20/64 28a Produc	sı tion - Interva	1664.0 I B				7.	0-10	<u> </u>							
Date First	Test	Hours	Test	Oil	Gas		ater	Oil Gr		Gas		Product	tion Method		
Produced	Date	Tested	Production	BBL	MCF	BI	BL	Corr. A	API	Gravity					
Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	W BI	ater 3L	Gas:O Ratio	il	Well St	atus				

(See Instructions and spaces for additional data on reverse side)
ELECTRONIC SUBMISSION #125279 VERIFIED BY THE BLM WELL INFORMATION SYSTEM
\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

RECEIVED

28b. Prod	uction - Inter	val C			-						
Date First	Test	Hours	Test	Oil	Gas		oil Gravity	Gas	Production Method		
Produced	Date	Tested	Production	BBL	MCF	BBL	Corr. API	Gravity			
Choke	Tbg. Press.	Csg.	24 Hr.	Oil BBL	Gas MCF		las:Oil tatio	Well Status			
Size	Flwg. SI	Press.	Rate	BBL	MCF	BBL	auo				
28c. Prod	uction - Inter	val D									
Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF		oil Gravity Corr. API	Gas Gravity	Production Method		
			$\overline{}$	•							
Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF		Jas:Oil Latio	Well Status			
29. Dispo	sition of Gas	Sold, used	for fuel, ven	ted, etc.)	<u> </u>						
SOLE	onary of Porous	Zonas (In	aluda Aguife	-ra).				31 F	ormation (Log) M	arkers	
	•				reof: Core	d intervals and all	drill-stem	31.1	officiation (Eog) 14	.arrevio	
tests, i	including dep ecoveries.	th interval	tested, cushi	on used, tin	ne tool ope	n, flowing and sh	it-in pressure	s			
				1	П	D !!	C		Name		Тор
	Formation		Тор	Bottom		Descriptions,	Contents, etc				Meas. Depth
									REEN RIVER BIRD'S NEST		1444 1876
								N	MAHOGANY VASATCH		2638 5188
									MESAVERDE		8053
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32. Additi	ional remarks hed is the ch	(include pl ronologic	lugging proc al well histo	edure): erv. perfora	tion repor	rt & final survey.					
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22 Cinala	enclosed atta	ahmanta									· · · · · · · · · · · · · · · · · · ·
	ectrical/Mech		(1 full set re	ea'd.)		2. Geologic Re	port	3. DST 1	Report	4. Directio	nal Survey
	ndry Notice f	_	•		1	6. Core Analys	-	7 Other:			
34. I here	by certify tha	the forego							ble records (see at	tached instruction	ons):
			Elect			25279 Verified by E OIL & GAS OF					
Name	(please print,	JAIME L	. SCHARNO	OWSKE			Title R	REGULATORY A	NALYST		
Signat	ture	(Flectron	ic Submiss	ion)			Date 1	2/09/2011			
oignai	·····	\L.10011011	Capinios								<del></del>

#### **Operation Summary Report**

Well: NBU 921-15G2S GREEN	Spud Conductor: 6/8/2011	Spud Date: 6/21/2011				
Project: UTAH-UINTAH	Site: NBU 921-15C PAD	Rig Name No: ENSIGN 145/145, CAPSTAR 310/310				
Event: DRILLING	Start Date: 5/25/2011	End Date: 9/10/2011				

Active Datum: RKB @4,805.00usft (above Mean Sea

Level)

UWI: NW/NE/0/9/S/21/E/15/0/0/26/PM/N/838.00/E/0/2,631.00/0/0

Level)						Escape de la Constantina del Constantina de la C		
Date		Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)
6/21/2011	11:00	- 14:0	0 3.00	DRLSUR	01	С	Р	SKID RIG TO LAST WELL ON PAD NBU 921-15G2S
		- 15:3		DRLSUR	14	Α	P	WELD ON CONDUCTOR AND RIG UP FLOW LINE
		- 16:0		DRLSUR	06	Α	₽	MAKE UP BHA AND PREP TP SPUD
	16:00	- 17:0	0 1.00	DRLSUR	02	С	Р	SPUD WELL 12.25" HOLE DRILL F/ 40' - 228' WOB 8-20 ROT 45 - 55 DHR 96 GPM 600
	17:00	- 18:3	0 1.50	DRLSUR	06	Α	Р	TOOH INSTALL DIRECTIONAL TOOLS AND ORIENT TOOLS TO MUD MOTOR AND TIH
	18:30	- 0:00	5.50	DRLSUR	02	С	Р	DRILL 12.25" HOLE F/ 228' - 800' AVE ROP 104 FT HR NO LOSSES WOB 20-22 ROT 45-55 DHR 96 GPM 600 LAST SURVEY 11.48 DEG 151.73 AZI
6/22/2011	0:00	- 5:00	5.00	DRLSUR	02	С	P	DRILL 12.25" HOLE F/ 800' - 1369' WOB 20-22 ROT 45-55 DHR 96 GPM 600 NO LOSSES AVE ROP 114 FT HR
	5:00	- 7:00	2.00	DRLSUR	08	Α	х	WORK ON #2 PUMP CHARGE PUMP
	7:00	- 10:0		DRLSUR	02	C	P	DRILL 12.25" HOLE F/ 1369' - 1593 WOB 20-22 ROT 45-55 DHR 96 GPM 600 NO LOSSES AVE ROP 114 FT HR
	10:00	- 10:3	0.50	DRLSUR	07	Α	P	DAILY RIG SERVICE
	10:30	- 11:0		DRLSUR	07	A	P	WORK ON #2 PUMP CHARGE PUMP
		- 0:00		DRLSUR	02	c	P	DRILL 12.25" HOLE F/ 1593 - 2406' WOB 20-22 ROT 45-55 DHR 96 GPM 600 NO LOSSES AVE ROP 62 FT HR 11.86 DEG 161.79
6/23/2011	0:00	- 8:30	8.50	DRLSUR	02	С	P	DRILL F/ 2406' - 2920' T.D. WOB 20-22 ROT 45-55 GPM 600 AVE ROP 92 FT HR LAST SURVEY 10.85 DEG 153.99 AZI
	8:30	- 9:30	1.00	DRLSUR	05	С	P	CIRCULALATE AND CONDITION MUD PRIOR TO LDDS
	9:30	- 14:0	4.50	DRLSUR	06	Α	Р	TOOH LAYING DOWN DRILL STRING BREAK DOWN DIRECTIONAL TOOLS FOR RIG DOWN
		- 18:3		DRLSUR	12	С	Р	RIG UP AND RUN 68 JOINTS 9 5/8 40# J55 SURF SHOE AT 2881 BAFFLE AT 2838'
	18:30	- 21:0	2.50	DRLSUR	12	E	Р	TEST LINES TO 2500 PSI /// PUMP 25 BBL SPACER  /// LEAD = 250 SX CLASS G CMT @ 3.82 YIELD &  11.0 WT // TAIL = 225 SX @ 1.15 YIELD & 15.8 WT  /// DROP PLUG & DISPLACE W/ 200 BBLS WATER ///  PLUG DN /// BUMP PLUG W/ 905 PSI /// FINAL LIFT =  640 PSI /// CHECK FLOATS- HELD W/ 1.15 BBL'S  BACK /// FULL RETURNS THRU OUT JOB /// 45 BBLS  TO SURFACE
	21:00	- 21:30	0.50	DRLSUR	14	Α	P	CUT CONDUCTOR AND HANG OFF SURFACE CASING
	21:30	- 22:00	0.50	DRLSUR	12	D	P	RUN 200' OF 1" PIPE DN BACKSIDE & TOP OUT W/ 100 SX CMT @ 15.8 WT & 1.15 RELEASE RIG @ 2200
9/1/2011	23:00	- 0:00	1,00	MIRU	01	С	P	PREPARE RIG TO SKID. MOVE CATWALK. UNDO FLARE LINES AND FLOWLINE. PLACE MATTING BOARDS IN FRONT OF RIG.
9/2/2011	0:00	- 2:00	2.00	MIRU	01	С	P	SKID RIG 20' FOWARD OVER WELL BORE. SET DOWN STACK. CENTER AND LEVEL RIG. MOVE CATWALK BACK INTO PLACE. TIGHTEN GERONIMO

/ell: NBU 921	-15G2S GI	REEN		Spud Co	nductor: 6	3/8/2011		Spud Date: 6/21/2011
roject: UTAH-	UINTAH			Site: NBU	J 921-150	PAD		Rig Name No: ENSIGN 145/145, CAPSTAR 310/310
vent: DRILLIN	1G			Start Date	e: 5/25/20	011		End Date: 9/10/2011
ctive Datum:	RKB @4,8	05.00usft (at	oove Mean S		·		S/21/E/15/0	/0/26/PM/N/838.00/E/0/2,631.00/0/0
evel)		·						
Date	(2) (1) (2) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (usft)
	2:00	- 3:30	1.50	MIRU	14	Α	Р	NIPPLE UP QUICK FLANGE. NIPPLE UP FLOW LINE TO STACK. MOVE IN FLOWLINE EXTENTION AND RIG UP.TAKE OUT SECTION OF FLARE LINES AND RECONNECT.
	3:30	- 9:00	5.50	MIRU	15	A	P	HOLD SAFETY MEETING. TEST TOP DRIVE VALVE, FLOOR VALVE, DART VALVE, PIPE AND BLIND RAMS, INSIDE AND OUTSIDE KILL LINE VALVES INSIDE CHOKE LINE VALVE, HCR VALVE, CHOKE LINE, CHOKE MANIFOLD VALVES AND CHOKES TO 5000 PSI FOR 10 MIN AND 250 PSI FOR 5 MIN. TEST ANNULLAR TO 2500 PSI FOR 10 MIN AND 250 PSI FOR 5 MIN. TEST CSG TO 1500 PSI FOR 30 MIN. SET WEAR BUSHING WITH ID 8 1/16" ID W/ NO ABNORMAL WEAR.
	9:00	- 10:00	1.00	MIRU	07	Α	Р	RIG SERVICE. SERVICE TOP DRIVE. CHANGE OUT DIES IN GRABBER BOX. CHANGE OUT SAVER SUB. SERVICE IDM. PERFORM RIG INSPECTION.
	10:00	- 11:00	1.00	MIRU	01	В	P	FINISH PUTTING CHAINS ON FLOWLINES TO SECURE FLARE LINES. AIR UP AIR BOOTS ON FLARE LINES.
	11:00	- 12:00	1.00	MAINT	08	Α	Z	DURING RIG INSPECTION FOUND LOOSE BOLTS ON IDL GATE IN DERRICK. TIGHTEN BOLTS AND REWIRE.
	12:00	- 16:00	4.00	MIRU	06	A	P	MAKE UP VAREL VM616P2HR BIT (SN 4002827) ONTO 6 1/2" 5:6 LOBE 4 STAGE 1.5 BEND .23 RPG BAKER MOTOR. SCRIBE MOTOR. MAKE UP MONELS. INSTALL EM TOOL. TRIP IN HOLE. INSTALL ROT HEAD RUBBER AFTER RUNNING HWDP. TRIP IN AND TAG CEMENT 2820'.
	16:00	- 16:30	0.50	DRLPRO	02	F	P	SPUD 9/2/2011 16:00 DRILL CEMENT AND FLOAT EQUIPMENT FORM 2820'-2924'. PLUG AND BAFFLE @ 2842'. FLOAT SHOE @ 2884'. ROT @ 40 RPM 473 GPM, WOB 12 K, COLLECT RUBBER AND BAFFLE PIECES AS IT CAME OVER SHAKER.
	16:30	- 0:00	7.50	DRLPRO	02	D	P	DRILL SLIDE 2924'-4126' (1202',160'/HR) WOB 18-20K AVE WOB 18K, SPM 130, GPM 585, PSI ON/OFF 1350/1850, DIFF 500, MOT RPM 134, ROT 50, TOR ON/OFF/UP 8/5/5, PU/SO/ROT 130/116/125, DRAG 5K, CIRC RESERVE PIT WITH 8.4# WATER. SLIDE 45' @ 160'/HR. 4% SLIDE 96% ROT. (START DROP OUT OF SHOE) 4' FLARE OUT OF SHOE. BOP DRILL 30 SEC.
9/3/2011	0:00	- 6:00	6.00	DRLPRO	02	D	P	DRILL SLIDE 4126'-5126' (1000',167'/HR) WOB  18-22K AVE WOB 21K, SPM 130, GPM 585, PSI ON/OFF 1450/1900, DIFF 450, MOT RPM 134, ROT 50, TOR ON/OFF/UP 9/5/5, PU/SO/ROT 130/116/125, DRAG 5K. CIRC RESERVE PIT WITH 8.4# WATER. SLIDE 10' @ 160'/HR. 1% SLIDE 99% ROT. 3' FLARE OUT ON CONNECTIONS. TRACE OIL FROM 4100'-5126'. NO LOSSES

11/16/2011 3:25:15PM

2

Well: NBU 921-1		REEN		Spud Con				Spud Date: 6/21/	
Project: UTAH-U	JINTAH			Site: NBU	921-150	PAD			Rig Name No: ENSIGN 145/145, CAPSTAR 310/310
Event: DRILLING	3			Start Date	: 5/25/20	111			End Date: 9/10/2011
Active Datum: RI .evel)	KB @4,8	305.00usft (ab	ove Mean Se	ea	UWI: N\	<b>/V/NE</b> /0/9/	S/21/E/15	0/0/26/PM/N/838	.00/E/0/2,631.00/0/0
Date	s	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	6:00	- 12:00	6.00	DRLPRO	02	D	P		DRILL SLIDE 5126'-5670' (544', 91'/HR) WOB 18-22K AVE WOB 21K, SPM 120, GPM 540, PSI ON/OFF 1300/1700, DIFF 400, MOT RPM 134, ROT 50, TOR ON/OFF/UP 8/5/5, PU/SO/ROT 150/136/143, DRAG 7K. CIRC RESERVE PIT WITH 8.4# WATER. SLIDE 35' @ 70'/HR. 6% SLIDE 94% ROT. 2' FLARE ON CONNECTIONS. TRACE OIL FROM GREEN RIVER
	12:00.	- 16:30	4.50	DRLPRO	02	a	P .		ZONE. NO LOSSES  DRILL SLIDE 5670'-6025 (355',79'/HR) WOB 18-23K  AVE WOB 22K, SPM 124, GPM 558, PSI ON/OFF  1400/1800, DIFF 400, MOT RPM 128, ROT 45-50,  TOR ON/OFF/UP 9/7/7, PU/SO/ROT 162/144/154,  DRAG 8K. CIRC RESERVE PIT WITH 8.4# WATER.  SLIDE 0'. 0% SLIDE 100% ROT.
	16:30	- 17:00	0.50	DRLPRO	07	Α	P		$\ensuremath{RIG}$ SERVICE. FUNCTION PIPE RAMS. SERVICE IDM.
	17:00	- 22:30	5.50	DRLPRO	02	D	P		DRILL SLIDE 6025'- 6495' (470', 85'/HR) WOB  18-25K AVE WOB 23K, SPM 130, GPM 585, PSI ON/OFF 1650/2150, DIFF 500, MOT RPM 134, ROT  45-55, TOR ON/OFF/UP 9/5/5, PU/SO/ROT  175/148/155, DRAG 20K, CIRC RESERVE PIT WITH  8.4# WATER. SLIDE 10' @ 75'/HR. 2% SLIDE 98%  ROT. LOSS FULL CIRC 6478', MIX AND PUMP LCM  SWEEP WHILE DRILLING. UNABLE TO GET  RETURNS.
	22:30	- 0:00	1.50	DRLPRO	22	G	X		REDUCE PUMP SPEED TO 225. MIX AND PUMP ANOTHER GEL AND LCM SWEEP. WE REGAINED PARTIAL CIRC. SEVERAL TIMES BUT CIRC WAS LOST EVERY TIME WE INCREASED PUMP RATE TO 405 GPM FOR AN ATTEMPT AT DRILLING. THE HOLE BECAME STICKY WHILE FIGHTING LOSS CIRC. SO WE STOOD BACK 1 STAND WHERE THE HOLE WAS FREE. STARTED LIGHT MUD UP @ MIDNIGHT W/ LCM.
9/4/2011	0:00	- 1:30	1.50	DRLPRO	22	G	X		START MUD UP TO CONTROL LOSSES. RAISE LCM TO 15% TO REGAIN CIRC @ 270 GPM. LOSS 100 BBLS MUD. HOLE STILL SEEPING @ 20 BBLS HR. MUD IN 8.9/33 LCM 15%.
	1:30	- 3:30	2.00	DRLPRO	02	D	P		DRILL SLIDE 6495'-6659' (164', 82'/HR) WOB 18-25K AVE WOB 23K, SPM 105, GPM 473, PSI ON/OFF 1700/1300, DIFF 400, MOT RPM 108, ROT 45-55, TOR ON/OFF/UP 9/5/6, PU/SO/ROT 170/152/159, DRAG 11K. MUD IN 9.0/34 LCM 15%. MUD OUT 9.1/33 LCM 15%. SLIDE 0'. 0% SLIDE 100% ROT. HOLE HEALED UP AFTER FIRST HOUR AFTER LOSSES. LOSS TOTAL 20 BBLS. (DRILLING @ ONLY 473 GPM)
	3:30	- 14:30	11.00	DRLPRO	02	D	Р		DRILL SLIDE 6659'- 7276' (617',56'/HR) WOB 18-29K AVE WOB 26K, SPM 120, GPM 540, PSI ON/OFF 1650/2000, DIFF 350, MOT RPM 124, ROT 45-55, TOR ON/OFF/UP 9/5/5, PU/SO/ROT 179/153/159, DRAG 20K, MUD IN 9.3/34 15%, MUD OUT 9.4/34 16%. SLIDE 15' @ 50'/HR, 3% SLIDE 97% ROT. ROP WAS DROPPING BELOW 30' HR AND WAS UNABLE TO GET ANY DIFFERENTIAL PRESSURE.

### **Operation Summary Report**

Well: NBU 921-15G2S GREEN	Spud Conductor: 6/8/2011	Spud Date: 6/21/2011
Project: UTAH-UINTAH	Site: NBU 921-15C PAD	Rig Name No: ENSIGN 145/145, CAPSTAR 310/310
Event: DRILLING	Start Date: 5/25/2011	End Date: 9/10/2011
		The same of the sa

Active Datum: RKB @4,805.00usft (above Mean Sea

UWI: NW/NE/0/9/S/21/E/15/0/0/26/PM/N/838.00/E/0/2,631.00/0/0

evel)		18 30 14 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4	reference (AMES) was con- of the 100	1000.52 ke usi sa	apr 2 2902 -		oraces some service and an entre			
Date	Time	Duration	Phase	Code	Sub	P/U	MD From	Operation		
3	Start-End	(hr)			Code	14.7	(usft)			
	14:30 - 15:00	0.50	DRLPRO	05	C	P		MIX 11# 35 BBLS PILL AND PUMP FOR DRY JOB. NO		
						_		FLOW ON FLOW CHECK.		
	15:00 - 22:30	7.50	DRLPRO	06	Α	P		TRIP OUT OF HOLE FOR BIT. STRAIGH PULL OF		
								BOTTOM OF HOLE 55 K OVER. TIGHT SPOT @		
								6248', NO FLOW ON CHECKS, HOLE TAKING		
								PROPER FLUID ON TRIP. PULL ROT HEAD RUBBER		
								AFTER HWDP, PULL EM TOOL, BREAK BIT AND LD		
	22:30 - 0:00	1.50	DRLPRO	06		P		MUD MOTOR, BIT WAS CLEAN.		
	22.30 - 0;00	1.50	DKLFKU	00		г		M/U SMITH MDI 616 BIT W/ 6/14'S ON HUNTING 1.5 BH .16 RPG. SCRIBE MOTOR AND INSTALL EM		
								TOOLS INTO DIRECTIONAL ASSEMBLY. TRIP IN		
								HOLE W/ HWDP AND INSTALL ROT RUBBER.		
								TIGHTEN TURN BUCKLES.		
9/5/2011	0:00 - 0:30	0.50	DRLPRO	06	Α	Р		TRIP IN HOLE WITH NEW BIT AND MOTOR, TRIP IN		
3/3/2011	0.00	0.00	DILLINO	00	^	•		HOLE TO SHOE.		
	0:30 - 1:00	0,50	DRLPRO	05	Α	P		CIRC OUT GREEN RIVER GAS. 20' FLARE.		
	1:00 - 4:00	3.00	DRLPRO	06	A	P		TRIP IN HOLE, NO TIGHT HOLE ON TRIP IN, FILLED		
	1.00 - 4,00	3,00	DICETIO	00	^	ı		PIPE @ 5000'. NO FLARE, TRIP TO BOTTOM. WASH		
								DOWN LAST STAND, 5' FILL, NO LOSSES ON TRIP.		
	4:00 - 16:00	12.00	DRLPRO	02	D	P		DRILL SLIDE 7276'-8289' (1013, 84'/HR) WOB		
	10.00	12.00	Ditti	UZ.	,	•		18-21K AVE WOB 21K, SPM 125, GPM 562, PSI		
								ON/OFF 2450/2050, DIFF 400 , MOT RPM 129, ROT		
								30-45. TOR ON/OFF/UP 10/8/8, PU/SO/ROT		
								207/187/192, DRAG 15K, MUD IN 9.7/37 16%, MUD		
								OUT 9,7/37 16%. SLIDE 30' @ 50'/HR. 3% SLIDE		
								97% ROT.		
	16:00 - 16:30	0.50	DRLPRO	07	Α	P		RIG SERVICE. FUNCTION PIPE RAMS AND		
								ANNULLAR. SERVICE TOP DRIVE.		
	16:30 - 20:30	4.00	DRLPRO	02	D	P		DRILL SLIDE 8289'-8588' (299', 75'/HR) WOB 18-23K		
								AVE WOB 21K, SPM 125, GPM 562, PSI ON/OFF		
								2500/2075, DIFF 425 , MOT RPM 129, ROT 40-45,		
								TOR ON/OFF/UP 11/8/8, PU/SO/ROT 223/190/199,		
								DRAG 24K. MUD IN 9.8/37 15%. MUD OUT 9.8/36		
								16%. SLIDE 0' . 0% SLIDE 100% ROT.		
	20:30 - 21:00	0.50	DRLPRO	22	G	Р		LOSS PARTIAL CIRC. LOSING 80 BBLS HR.		
								SLOWED PUMP DOWN TO 180 GPM AND STARTED		
								INCREASING LCM %. MUD IN 9.8/37 17% LCM. MUD		
								OUT 9.8/37 16% LCM. HOLE HEALED SLIGHTLY		
								AND WAS ABLE TO INCREASE PUMPS TO 405 GPN WITH 20 BBL HR LOSS. MAINTAIN VOLUME WITH		
								WATER AND INCREASE LCM WHILE DRLLING, LOS		
								40 BBLS.		
	21:00 - 0:00	3,00	DRLPRO	02	D	P		DRILL SLIDE 8588'-8756' (168', 56'/HR) WOB		
	=	0.00	21101110		-	•		18-23K AVE WOB 21K, SPM 90-105, GPM		
								405-473-, PSI ON/OFF 2100/1750, DIFF 350 , MOT		
								RPM 64-76, ROT 45-55 TOR ON/OFF/UP 11/8/9,		
								PU/SO/ROT 219/195/201, DRAG 18K. MUD IN 9.9/38		
								20%. MUD OUT 9.9/39 20%. SLIDE 16' @ 21'/HR.		
								10% SLIDE 90% ROT. LOSS 35 BBLS MUD.		

Vell: NBU 921-	15G2S G	REEN		Spud Co	nductor:	6/8/2011		Spud Date: 6/2	21/2011
Project: UTAH-l	JINTAH			Site: NBU	921-150	PAD			Rig Name No: ENSIGN 145/145, CAPSTAR 310/310
vent: DRILLIN	 G			Start Date	e: 5/25/20	011	T		End Date: 9/10/2011
Active Datum: F	RKB @4,8	05.00usft (ab	ove Mean S				S/21/E/	5/0/0/26/PM/N/83	38.00/E/0/2,631.00/0/0
.evel)									
Date		Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
9/6/2011	0:00	- 12:00	12.00	DRLPRO	02	D	P .		DRILL SLIDE 8756'- 9340' (584',49'/HR) WOB 18-23K AVE WOB 21K, SPM 105, GPM 473, PSI ON/OFF 2350/2000, DIFF 350, MOT RPM 76, ROT 45-50 TOR ON/OFF/UP 12/9/10, PU/SO/ROT 234/193/206, DRAG 28K, MUD IN 10.6/42 20%. MUD OUT 10.7/40 20%. SLIDE 101' @ 25'/HR. 17% SLIDE 83% ROT. SLIDING TO AIM HOLE UP INTO NORTH WEST QUADRANT. NO LOSSES. (INSPECTED CSG. 6 REJECT P-110 AND 1 REJECT I-80. DRIFTED, CLEANED, TALLIED, INSPECTED AND WRAPPED THREADS AND BOXES.)
		- 17:30	5.50	DRLPRO	02	D	Р		DRILL 9340'-9648' (308', 56'/HR) WOB 18-23K AVE WOB 21K, SPM 105, GPM 473, PSI ON/OFF 2400/2050, DIFF 350, MOT RPM 76, ROT 45-50 TOR ON/OFF/UP 12/9/10, PU/SO/ROT 238/193/208, DRAG 30K. MUD IN 10.7/39 20%. MUD OUT 10.7/41 20%. SLIDE 0' . 0% SLIDE 100% ROT. 10' FLARE FRON 9640'- 9650' W/ 10.7 MUD WT. (SKIMMED OIL OFF OF RESERVE PIT.) (NO LOSSES)
		- 18:00	0.50	DRLPRO	07	A	P		SERVICE RIG. FUNCTION PIPE RAMS.
	18.00	- 0:00	6.00	DRLPRO	02	D	P		DRILL 9648'-9943' (295',49'/HR) WOB 18-23K AVE WOB 21K, SPM 105, GPM 473, PSI ON/OFF 2450/2100, DIFF 350, MOT RPM 76, ROT 40-45 TOR ON/OFF/UP 13/10/10, PU/SO/ROT 232/203/216, DRAG 16K. MUD IN 11.0/41 21%. MUD OUT 11.0/43 21%. SLIDE 0'. 0% SLIDE 100% ROTATE.( NO LOSSES.)
9/7/2011		- 9:30 - 11:30	9.50	DRLPRO	02 05	D	P		DRILL 9943'-10337' (394', 42'/HR) TD 9/7/2011 09:30.WOB 18-25K AVE WOB 23K, SPM 105, GPM 473, PSI ON/OFF 2500/2150, DIFF 350, MOT RPM 76, ROT 40-45 TOR ON/OFF/UP 13/10/10, PU/SO/ROT 232/203/216, DRAG 16K, MUD IN 11.6/42 21%, MUD OUT 11.5/44 25%. SLIDE 0'.0% SLIDE 100% ROTATE, HOLE STARTED SEEPING 10 BBLS HR @ 10200'. RAISED LCM TO 25% TO CONTROL LOSSES. 15 BBLS LOSS.
			2.00	EVALPR			٣		CIRCULATE AND CONDTION HOLE. CIRC BOTTOMS UP. RAISE MUD WT TO 11.7#. MIX 35 BBL 13# PILL FOR DRY JOB AND HOLD. MUD IN 11.7/42 25%. MUD OUT 11.7/43 25%. NO LOSSES.
		- 17:30	6.00	EVALPR	06	E	В		PUMP AND ROT OUT 400'. PUMP DRY JOB. STAIGH' PULL OFF BOTTOM 70K OVER. NO TIGHT HOLE ON TRIP TO SHOE. NO FLOW ON FLOW CHECKS. HOLE TOOK PROPER AMOUNTS OF MUD. NO LOSSES.
		- 19:30	2.00	EVALPR	09	Α	Р		SLIP AND CUT DRILL LINE. 1766 TON MILES.
	18.30	- 20:00	0.50	EVALPR	05	Α	Р		CIRCULATE 13# PILL OUT OF PIPE AND TO SURFACE.
	20:00	- 22:00	2.00	EVALPR	06	E	P		TRIP IN HOLE 5920' NO TIGHT HOLE. GOOD DISPLACEMENT. TRANSFERED 80 BBLS OF MUD TO UPRIGHTS TO KEEP PITS FROM RUNNING OVER.

/ell: NBU 921	-15G2S G	REEN		Spud Co	nductor: 6	8/8/2011	Spud Da	ate: 6/21/2011
roject: UTAH-	-UINTAH			Site: NBL	921-150	PAD		Rig Name No: ENSIGN 145/145, CAPSTAR 310/310
vent: DRILLIN	NG			Start Date	e: 5/25/20	011		End Date: 9/10/2011
ctive Datum:	RKB @4,8	05.00usft (at	ove Mean Se	еа	UWI: N	N/NE/0/9/	S/21/E/15/0/0/26/P	M/N/838.00/E/0/2,631.00/0/0
evel)								
Date		Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U MDF (us	
	22:00	- 0:00	2.00	EVALPR	22	G	X	BREAK CIRCULATION AT 5920', AND LOST ALL RETURNS. LOSS 100 BBLS. KEEP PIPE IN MOTOIN AND SHUT DOWN PUMPS. TRANSFER 80 BBLS BACK INTO MUD TANKS. AND RAISED LCM TO 30%.BUILT VOLUME WITH WATER. PUMP DOWN 11# 30% LCM MUD @ 180 GPM. LOSS 35 BBLS AND REGAINED PARTIAL CIRC. (STILL LOSING 45 BBLS HR) TRIPPED IN 5 STANDS TO 100' ABOVE LOSS ZONE.
9/8/2011	0:00	- 0:30	0.50	EVALPR	22	G	X	BRIDGE @ 6200', FIGHT LOSS CIRC ABOVE BRIDGE. RAISE LCM TO 30%. AND PUMP @ 180 GPM. REGAIN FULL CIRC. INCREASED PUMP TO 270 GPM. LOSS 20 BBLS.
	0:30	- 1:00	0.50	EVALPR	02	D	Р	WASH AND REAM FROM 6250'-6450'. WASH DOWN WITH 270 GPM. NO LOSSES. MUD IN 11.2/42 30%, MUD OUT 11.7/42 24% LCM.
	1:00	- 4:00	3.00	EVALPR	06	E	P	TRIP IN HOLE TO BOTTOM. NO TIGHT HOLE. GOOD DISPLACEMENT. NO FILL. ESTABLISHED GOOD CIRC. 7745'.
	4:00	- 7:30	3.50	EVALPR	05	A	P	CIRC AND CONDITION HOLE. BOTTOMS UP BROUGHT 5-25' FLARE FOR 20 MIN. FULL CIRC. EVEN OUT MUD WT TO 11.7# AND RAISE LCM TO 30% AROUND MUD IN 11.7/42 30% LCM. MUD OUT 11.7/43 30%. MIX 35 BBL 13.5# PILL AND HOLD FOR DRY JOB.
	7:30	- 15:30	8.00	EVALPR	06	В	P	TRIP OUT OF HOLE FOR LOGS. PUMP AND ROT OUT 5 STD. TO 9800'. PUMP DRY JOB. TRIP OUT WITH NO TIGHT HOLE. WELL TAKING PROPER FLUID. NO FLOW ON FLOW CHECKS. PULL ROT HEAD RUBBER AT HWDP. PULL EM TOOL AND STAND BACK MONELS. BREAK BIT AND LD MUD MOTOR. FUNCTION BOP'S. (CHECK FLUID IN STACK FOR
	15:30	- 20:30	5.00	EVALPR	11	D	P	LOSSES OR FLOW) HOLD SAFETY MEETING W/ HALLIBURTON LOGGERS. RIG UP LOGGERS AND P/U TRIPLE COMBO TOOLS. RUN TOOLS TO 10332'. RUN REPEAT PASS AND LOG UP TO CSG DEPTH OF
	20:30	~ 0:00	3.50	CSG	06	D	P	2893'. RIG DOWN LOGGERS. TRIP IN HOLE W/ DIRECTIONAL TOOLS AND BREAK DOWN MONEL AND SUBS. MAKE UP TYPE FH21 TRICONE ON BIT SUB AND TRIP IN HOLE ON END OF
9/9/2011	0:00	- 5:00	5.00	CSG	06	D	Р	2800' AT MIDNIGHT.  TRIP IN HOLE TO 10337'. GOOD DISPLACEMENT  THROUGH OUT. ESTABLISH GOOD CIRC 3000', AND  7100'. NO TIGHT HOLE ON TRIP.
	5:00	- 6:30	1.50	CSG	05	Α	P	CIRCULATE BOTTOMS UP. 5-15' FLARE FOR 20 MIN ON BOTTOMS UP. GOOD CIRC. MUD IN 11.7/44 30%. MUD OUT 11.8/43 30%. MIX 13.2# 35 BBL PILL AND HOLD FOR DRY JOB.

Vell: NBU 921-	15G2S GI	REEN		Spud Co	nductor: 6	3/8/2011		Spud Date: 6/21/2011					
roject: UTAH-l	HATMIL			Site: NBL	J 921-15C	PAD		Rig Name No: ENSIGN 145/145, CAPSTAR 310/310					
vent: DRILLIN	G			Start Dat	e: 5/25/20	11		End Date: 9/10/2011					
ctive Datum: R evel)	RKB @4,8	05.00usft (ab	ove Mean Se	ea	UWI: N\	W/NE/0/9	/S/21/E/15/	E/15/0/0/26/PM/N/838.00/E/0/2,631.00/0/0					
Date	St	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U 🎺	MD From Operation (usft)					
		- 16:00 - 17:00	9.50	CSG CSG	06	D A	P	PUMP OUT 4 STD. PUMP DRY JOB AND LAY DOWN DRILL STRING. HOLE TAKING PROPER FLUID. NO FLOW ON CHECKS. RUN IN HOLE W/7 STD OUT OF DERRICK AFTER REACHING HWDP. LAY DOWN THE REST OF THE DRILL PIPE. PULL ROT HEAD RUBBER. LAY DOWN HWDP. PULL WEAR BUSHING. HOLD SAFETY MEETING W/ KIMZEY CSG. REMOVE					
								HYDRAULIC ELEVATORS. INSTALL BUTTRESS CSG QUILL ON TOP DRIVE. RIG UP CSG ELEVATORS, BACK UP TONGES AND CSG TONGES. SET UP AIR SLIPS.					
	17:00	- 0:00	7.00	CSG	12	С	P	PICK UP P-110 SHOE JT, MAKE UP OPEN FLOAT SHOE AND OPEN FLOAT COLLAR WITH THREAD LOCK. RUN IN HOLE W! 16 JTS OF 4.5", P-110, 11.6# BTC CSG FOR TOTAL OF 677'. RUN 227 JTS OF 4.5" I-80 11.6# BTC CSG. (243 JTS TOTAL). RAN 15 CENTRALIZERS FIRST 3 JTS THEN EVERY THIRD JT TILL GONE. INSTALL ROT HEAD RUBBER AFTER CENTRALIZER WERE INSTALLED. 5800'-6200' TORQUE AVERAGE. RUNNING CSG @					
9/10/2011	0:00	- 2:30	2.50	CSG	12	С	P	6100' @ REPORT TIME. ESTABLISHED CIRC 3000' AND 6000'.  RAN CSG FROM 6100'- 10316'. RAN IN HOLE W/ 16 JTS OF 4.5", P-110, 11.6# BTC CSG FOR TOTAL OF 677'. RAN 227 JTS OF 4.5" I-80 11.6# BTC CSG. (243 JTS TOTAL). RAN 15 CENTRALIZERS FIRST 3 JTS THEN EVERY THIRD JT TILL GONE. INSTALL ROT HEAD RUBBER AFTER CENTRALIZER WERE INSTALLED. SET BOTTOM FLOAT SHOE 10316' KB. SET TOP OF FLOAT COLLAR 10270' KB. SET TOP					
								OF MESA VERDE MARKER JTS @ 8057' KB. SET TOP OF WASATCH MARKER JT @ 5133' KB. (PIPE STOPPED AUTO FILLING @ 2500') BREAK CIRC. 3000' AND 6000', RIG UP BJ CEMENT HEAD.					
	2:30	- 3:30	1.00	CSG	05	D	P	CIRC BOTTOMS UP @ 473 GPM. 1100 PSI. 5-12' FLARE FOR 20 MIN. RIG DOWN KIMZEY CSG. HOLD SAFETY MEETING W/ BJ SERVICES. PRIME TRUCKS. MUD 11.7/40 LCM 30%.					
	3:30	- 6:30	3.00	CSG	12	E	P	RESSURE TEST TO 5000 PSI. PUMP 5 BBLS FRESH WATER AHEAD. PUMP 12 BBLS (20 SX) 10.7 PPG 3.56 YD 22.17 GAL/SK SCAVENGER CEMENT. PUMP 239 BBLS (557 SX) OF 11.7 PPG 2.50 YD 14.24 GAL/SK LEAD CEMENT. PUMP 256 BBLS (1100 SX) OF 14.3# 1.31 YD 5.41 GAL/SK. POZ 50/50 TAIL CEMENT. SHUT DOWN FLUSH LINES. DROP TOP PLUG AND DISPLACE W/ 159.7 BBLS OF FRESH WATER TREATED W/ CLAYCARE AND MAGNACIDE. FULL CIRC THROUGH OUT CEMENT JOB. 60 BBLS OF CONTAMINATED MUD BEFORE CEMENT. 40 BBLS OF CEMENT TO SUR W/ 10% LCM MIXED IN TILL PLUG DOWN. LIFT PSI OF 3130 @ 3 BBLS MIN. BUMP PLUG 3726 PSI PRESSURE HELD 5 MINS. FLOAT HELD. FLOW BACK 2 BBLS. EST.					

#### **US ROCKIES REGION Operation Summary Report** Spud Conductor: 6/8/2011 Well: NBU 921-15G2S GREEN Spud Date: 6/21/2011 Project: UTAH-UINTAH Site: NBU 921-15C PAD Rig Name No: ENSIGN 145/145, CAPSTAR 310/310 **Event: DRILLING** End Date: 9/10/2011 Start Date: 5/25/2011 UWI: NW/NE/0/9/S/21/E/15/0/0/26/PM/N/838.00/E/0/2,631.00/0/0 Active Datum: RKB @4,805.00usft (above Mean Sea Level) Date Phase Code P/U Sub MD From Operation Time Duration Start-End (hr) Code (usft) 6:30 - 12:00 CSG 5.50 14 FLUSH WATER THROUGHPUMPS, STACK, GAS BUSTER, FLOWLINES. SET C-22 SLIPS THROUGH STACK WITH 105K. NIPPLE DOWN AND PICK UP STACK, CUT CSG AND INSTALL LOCK DOWN FLANGE, CLEAN PITS, 800 BBLS OF 11.7# MUD IN STORAGE. RELEASE RIG 9/10/2011 12:00. 12:00 - 12:00 0.00 CSG PRODUCTION: Rig Move/Skid start date/time:9/1/2011 23:00 Rig Move/Skid finish date/time:9/2/2011 2:00 Total MOVE hours:3.0 Prod Rig Spud date/time:9/2/2011 16:00 Rig Release date/time:9/10/2011 12:00 Total SPUD to RR hours:188.0 Planned depth MD10,191 Planned depth TVD10,113 Actual MD:10,337 Actual TVD:10,277 Open Wells AFE \$: Open wells \$/ft: PRODUCTION HOLE: Prod. From depth:2,924 Prod. To depth:10,337 Total PROD hours: 95 Log Depth:TRIPLE COMBO 10332 Production Casing size:4.5 P110 & 4.5 I-80 # of casing joints ran:16 JTS OF P-110, 227 JTS OF 1-80 Casing set MD:10,316.0 # sx of cement:1,657 Cement blend (ppg:)SCAV 10.7, LEAD 11.7, TAIL Cement yield (ft3/sk):SCAV 3.56 ,LEAD 2.5 TAIL Est. TOC (Lead & Tail) or 2 Stage :,LEAD 13', TAIL Describe cement issues: FULL CIRC. 60 BBLS

11/16/2011 3:25:15PM

CONTAIMINATED MUD BEFOR CEMENT. CEMENT

8

Describe hole issues:LOSS CIRC ZONE 6450'

Max dogleg MD:6872' 2.41 DOG LEG

HAD 10% LCM FROM MUD.

DIRECTIONAL INFO:

KOP:365 Max angle:14.50 Departure:522.00

#### 1 General

#### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

#### 1.2 Well/Wellbore Information

Well	NBU 921-15G2S GREEN	Wellbore No.	ОН	
Well Name	NBU 921-15G2S	Wellbore Name	NBU 921-15G2S	
Report No.	1	Report Date	10/20/2011	
Project	UTAH-UINTAH	Site	NBU 921-15C PAD	
Rig Name/No.	GWS 1/1	Event	COMPLETION	
Start Date	10/20/2011	End Date	10/27/2011	
Spud Date	6/21/2011	Active Datum	RKB @4,805.00usft (above Mean Sea Level)	
UWI	NW/NE/0/9/S/21/E/15/0/0/26/PM/N/838.00/E/0/2	2,631.00/0/0		

#### 1.3 General

Contractor	CASEDHOLE SOLUTIONS	Job Method	PERFORATE	Supervisor	
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

#### 1.4 Initial Conditions

#### 1.5 Summary

Fluid Type		Fluid Density	Gross Interval	7,514.0 (usft)-9,960.0 (usf	Start Date/Time	10/24/2011	12:00AM
Surface Press		Estimate Res Press	No. of Intervals	31	End Date/Time	10/24/2011	12:00AM
TVD Fluid Top		Fluid Head	Total Shots	(	Net Perforation Interval		50.00 (usft)
Hydrostatic Press		Press Difference	Avg Shot Density	0.00 (shot/ft)	Final Surface Pressure		
Balance Cond	NEUTRAL				Final Press Date		

#### 2 Intervals

#### 2.1 Perforated Interval

Date Formation/ CCL@ Reservoir (usft)	CCL-T MD Top MD Base Shot S (usft) (usft) Density (shot/ft)	Misfires/ Diamete Carr Type /Carr Add. Shot r (in)	Manuf Carr Phasing Charge Des Size (*) Manufa	er van eer van 18 met 18 st. broom an 18 met 25 st. 18
10/24/201 WASATCH/	7,514.0 7,516.0	0.360 EXP/	3.375 120.00	23.00 PRODUCTIO
1		:		N
12:00AM				

#### 2.1 Perforated Interval (Continued)

Date	Formation/ CCL@ Reservoir (usft)	S	MD Top (usft)	MD Base (usft)	Shot Density	Misfires/ Add. Shot	Diamete	Сап	Type /Carr Manuf	Carr Size	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight	Reason	Misrun
10/24/201	WASATCH/	(usft)	7,609.0	7,611.0	(shot/ft)		(in) 0.360	EXP/		(in) 3.375	120.00		(gram) 23.00	PRODUCTIO	
1 12:00AM 10/24/201	WASATCH/		7,818.0	7,821.0			0.360	EXP/		3.375	90.00		23.00	PRODUCTIO	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
12:00AM 10/24/201 1	MESAVERDE/		8,072.0	8,073.0			0.360	EXP/		3.375	90.00		23.00	N PRODUCTIO N	
1	MESAVERDE/		8,089.0	8,090.0			0.360	EXP/		3.375	90.00		23.00	PRODUCTIO N	
1	MESAVERDE/	3	8,110.0	8,112.0			0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM 10/24/201 1 12:00AM	MESAVERDE/		8,136.0	8,138.0			0.360	EXP/	- 1	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/		8,201.0	8,202.0			0.360	EXP/	:	3.375	90.00		23.00	PRODUCTIO N	Marco - 2 may - 20
	MESAVERDE/	: "	8,252.0	8,253.0			0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/		8,322.0	8,323.0			0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	1
and the second of	MESAVERDE/	*	8,372.0	8,373.0		:	0.360	EXP/		3.375	90.00		23.00	PRODUCTIO N	
10/24/201 1 12:00AM	MESAVERDE/		8,389.0	8,390.0			0.360	EXP/		3.375	90.00		23.00	PRODUCTIO N	
10/24/201 1 12:00AM	MESAVERDE/	: :	8,430.0	8,431.0			0.360	EXP/		3.375	120.00			PRODUCTIO N	
10/24/201 1 12:00AM	MESAVERDE/		8,442.0	8,443.0			0.360	EXP/		3.375	120.00			PRODUCTIO N	
10/24/201 1 12:00AM	MESAVERDE/		8,455.0	8,456.0		·	0.360	EXP/		3.375	90.00		23.00	PRODUCTIO N	

#### 2.1 Perforated Interval (Continued)

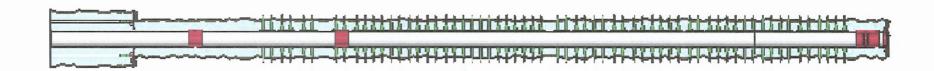
Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S	MD Top (usft)	MD Base (usft)	Shot Density	Misfires/ Add. Shot	Diamete r	Carr Type /Carr Manuf	Carr Size	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight	Reason	Misrun
10/24/201	MESAVERDE/	<u> </u>	(usft)	8,806.0	8,808.0	(shot/ft)		(in) 0.360	EXP/	(in) 3.375	90.00		(gram) 23.00	PRODUCTIO	
1 12:00AM											:			N	
	MESAVERDE/	:		8,890.0	8,892.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM												10.00	:		
10/24/201 1	MESAVERDE/			8,945.0	8,947.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM				i Harana											
10/24/201	MESAVERDE/			9,078.0	9,080.0		1	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
12:00AM											: :			: N	
1	MESAVERDE/		:	9,210.0	9,212.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MEO & /EDDE/			0.000.0	0.000.0			0.360	EVD	3.375	400.00		22.00	PRODUCTIO	
10/24/201	MESAVERDE/			9,266.0	9,268.0			0.360	EXP	3.3/5	120.00		23.00	:N	1
12:00AM									: :		400.00		20.00	DDADUATIO	
10/24/201 1	MESAVERDE/			9,298.0	9,300.0			0.360	EAP	3.375	120.00		23.00	PRODUCTIO N	
12:00AM							1						. **		<u>.</u>
10/24/201 1	MESAVERDE/			9,441.0	9,443.0		i	0.360	EXP/	3,375	120.00		23,00	PRODUCTIO N	
12:00AM														1 15 to 15	
10/24/201	MESAVERDE/	:		9,577.0	9,579.0		:	0.360	, EXP/	3.375	120.00		23.00	PRODUCTIO N	
12:00AM															
10/24/201	MESAVERDE/	r		9,598.0	9,600.0			0.360	EXP/	3.375	120.00.		23.00	PRODUCTIO N	
12:00AM						:								att Talana an an	
10/24/201 1	MESAVERDE/		:	9,628.0	9,630.0		1	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
12:00AM				<u>.</u>					1 <u></u>	[]	: :		(	) ( <u></u>	
10/24/201	MESAVERDE/	:		9,693.0	9,694.0		į.	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	:
12:00AM		1		; ; •••				· ·	en de la companya de				 		: ::
10/24/201	MESAVERDE/			9,727.0	9,728.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM			1											1	
10/24/201	MESAVERDE/		1	9,854.0	9,855.0			0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM		1	:				:						:	14	

#### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
10/24/201 1 12:00AM	MESAVERDE/			9,944.0	9,946.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
10/24/201 1 12:00AM	MESAVERDE/			9,958.0	9,960.0			0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

#### 3 Plots

#### 3.1 Wellbore Schematic



#### US ROCKIES REGION

#### **Operation Summary Report**

Well: NBU 921-15G2S GREEN	Spud Conductor: 6/8/2011	Spud Date: 6/21/2011
Project: UTAH-UINTAH	Site: NBU 921-15C PAD	Rig Name No: GWS 1/1
Event: COMPLETION	Start Date: 10/20/2011	End Date: 10/27/2011

Active Datum; RKB @4,805.00usft (above Mean Sea

UWI: NW/NE/0/9/S/21/E/15/0/0/26/PM/N/838.00/E/0/2,631.00/0/0

Date	Time	Duration	Phase	Code	Sub P/U	MD From Operation
	Start-End	(hr)			Code	(usft)
10/20/2011	7:00 - 11:00	4.00	COMP	33	Р	FILL SURFACE CSG. MIRU B&C QUICK TEST. PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 3 PS PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 21 PSI. 1ST PSI TEST T/ 7000 PSI. HELD FOR 30 MIN LOST 78 PSI. NO COMMUNICATION WITH SURFACE CSG BLEED OFF PSI. MOVE T/ NEXT WELL.SWIFN
10/21/2011	7:00 - 11:00	4.00	COMP	37	P	PERF STG 1)PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH PERF AS PER PERF DESIGN. POOH. SWIFW
10/24/2011	6:45 - 7:00	0.25	COMP	48	P	RU SUPERIOR & CASED HOLE SOLUTION SAFETY MEETING HIGH PRESSURE & WIRE LINE LUBRICATORS

11/16/2011 3:32:01PM

		US ROCI	KIES REGION	
		Operation S	ummary Report	
Well: NBU 921-15G2S GREEN	Spud Co	nductor: 6/8/2011	Spud Date: 6/21	/2011
Project: UTAH-UINTAH		921-15C PAD		Rig Name No: GWS 1/1
Event: COMPLETION	Start Dat	e: 10/20/2011		End Date: 10/27/2011
Active Datum: RKB @4,805.00usft (above Mean Sea		<del></del>	S/21/E/15/0/0/26/PM/N/838	3.00/E/0/2,631.00/0/0
Level)	<del></del>			
Date Time Duration	Phase	Code Sub	P/U MD From	Operation
Start-End (hr) 7:00 - 18:00 11.00	COMP	Code   36 B	(usft) P	FRAC STG 1)WHP 1840 PSI, BRK 4027 PSI @ 4.9
1000				BPM. ISIP 2894 PSI, FG .73.
				CALC HOLES OPEN @ 47.1 BPM @ 6140 PSI = 83%
				HOLES OPEN. ISIP 3263 PSI, FG .77 NPI 369 PSI.
				MP 6495 PSI, MR 52.00 BPM, AP 6135 PSI, AR 49.9
				ВРМ
				PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L
				PERF STG 2)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN,
				23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET
				CBP @ 9660' P/U PERF AS PER PERF DESIGN. POOH. X-OVER FOR FRAC CREW
				FRAC STG 2)WHP 2655 PSI, BRK 3318 PSI @ 4.1
				BPM. ISIP 2738 PSI, FG .73
				CALC HOLES OPEN @ 39.7 BPM @ 5654 PSI = 69% HOLES OPEN.
				ISIP 3081 PSI, FG .76 NPI 343 PSI.
				MP 6291 PSI, MR 50.0 BPM, AP 5869 PSI, AR 48.1 BPM
				PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L
				PERF STG 3)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN,
				23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 9330' P/U PERF AS PER PERF DESIGN. POOH. X-OVER FOR FRAC CREW
				FRAC STG 3)WHP 2250 PSI, BRK 3051 PSI @ 4.1 BPM. ISIP 2476 PSI, FG .71
				CALC HOLES OPEN @ 42.1 BPM @ 5782 PSI = 67% HOLES OPEN.
				ISIP 2543 PSI, FG .72 NPI 67 PSI.
				MP 6424 PSI, MR 50.1 BPM, AP 6029 PSI, AR 44.5 BPM
				PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W.L
				PERF STG 4)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN,
				23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET
				CBP @ 8977' P/U PERF AS PER PERF DESIGN. POOH. X-OVER FOR FRAC CREW
				FRAC STG 4)WHP 2065 PSI, BRK 5420 PSI @ 4.8 BPM. ISIP 2302 PSI, FG .70.
				CALC HOLES OPEN @ 30.3 BPM @ 5254 PSI = 61% HOLES OPEN.
				ISIP 3190 PSI, FG .80, NPI 888 PSI.
				MP 6535 PSI, MR 52.0 BPM, AP 6203 PSI, AR 42.3 BPM
				PUMPED 30/50 OTTAWA SAND IN THIS STAGE.X-OVER FOR W L
				PERF STG 5)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN,

11/16/2011

3:32:01PM

#### **US ROCKIES REGION Operation Summary Report** Spud Date: 6/21/2011 Spud Conductor: 6/8/2011 Well: NBU 921-15G2S GREEN Site: NBU 921-15C PAD Rig Name No: GWS 1/1 Project: UTAH-UINTAH Event: COMPLETION End Date: 10/27/2011 Start Date: 10/20/2011 UWI: NW/NE/0/9/S/21/E/15/0/0/26/PM/N/838.00/E/0/2,631.00/0/0 Active Datum; RKB @4,805,00usft (above Mean Sea Level) P/U Operation Date Phase Code Sub MD From Time Duration Start-End Code (usft) (hr) 23 GM. 36 HOLE SIZE, 90 DEG PHASING, RIH SET CBP @ 8486' P/U PERF AS PER PERF DESIGN. POOH, SWIFN 10/25/2011 7:00 - 18:00 11.00 COMP 36 В Р FRAC STG 5)WHP 1239 PSI, BRK 3631 PSI @ 4.7 BPM, ISIP 1789 PSI, FG .65 CALC HOLES OPEN @ 49.8 BPM @ 4921 PSI = 87% HOLES OPEN. ISIP 2556 PSI, FG .74, NPI 767 PSI. MP 5334 PSI, MR 50.5 BPM, AP 4857 PSI, AR 49.9 PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L PERF STG 6)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 DEG PHASING. RIH SET CBP @ 8232' P/U PERF AS PER PERF DESIGN. POOH, X-OVER FOR FRAC CREW FRAC STG 6)WHP 1422 PSI, BRK 3209 PSI @ 4.5 BPM. ISIP 2433 PSI, FG .74 CALC HOLES OPEN @ 50.3 BPM @ 4356 PSI = 100% HOLES OPEN. ISIP 2555 PSI, FG .75, NPI 122 PSI. MP 5163 PSI, MR 50.7 BPM, AP 4464 PSI, AR 50.3 PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L. PERF STG 7)PU 4 1/2 8K HAL CBP & 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 90 & 120 DEG PHASING. RIH SET CBP @ 7871' P/U PERF AS PER DESIGN, POOH, X-OVER FOR FRAC CREW. FRAC STG 7)WHP 802 PSI, BRK 3288 PSI @ 4.4 BPM. ISIP 1743 PSI, FG .76. CALC HOLES OPEN @ 50.1 BPM @ 4980 PSI = 82% HOLES OPEN. ISIP 2361 PSI, FG .75, NPI 618 PSI. MP 5355 PSI, MR 50.6 BPM, AP 4835 PSI, AR 50.2 PUMPED 30/50 OTTAWA SAND IN THIS STAGE X-OVER FOR W L PU 4 1/2 8K HAL CBP. RIH SET KILL PLUG @ 7464' POOH, SWI, DONE FRACING THIS WELL. TOTAL SAND = 116,078 LBS TOTAL CLFL = 6096 BBLS 7:00 - 7:15 COMP **HSM** 10/26/2011 0.25 41 7:15 - 17:00 Ρ 9.75 COMP 44 C MIRU, SPOT EQUIP, NDWH, NUBOP, PU 3 7/8" BIT, POBS, & XN SN, RIH W/ 234 JTS NEW 2 3/8" 4.7# L-80 TBG OFF TRLR TO 7416', RU PWR SWVL, SWIFN. P **HSM** 7:00 - 7:15 COMP 48

0.25

10/27/2011

#### US ROCKIES REGION

Vell: NBU 921-1	15G2S GREEN		Spud Co	nductor: 6	3/8/2011		Spud Date	te: 6/21/2011
roject: UTAH-U	JINTAH		Site: NBU	921-150	PAD			Rig Name No: GWS 1/1
vent: COMPLE	TION		Start Date	e: 10/20/2	2011			End Date: 10/27/2011
	KB @4,805.00usft (at	oove Mean Sea	3	UWI: N	W/NE/0/9	/S/21/E/1	5/0/0/26/PM	M/N/838.00/E/0/2,631.00/0/0
evel) Date	Time	Duration	Phase	Code	Sub	P/U	MD Fro	om Operation
	Start-End	(hr)		<u> </u>	Code		(usft)	
	7:15 - 17:00	9.75	COMP	44	С	P		WHP = 0 PSI, EST CIRC. PT BOP TO 3000 PSI, LOST 0 PSI IN 15 MIN. CONT TO PU 1 JT NEW 2 3/8" 4.7# L-80 TBG. TAG FILL @ 7435'. C/O 15' OF SND.
								CBP #1) DRLG OUT HAL 8K CBP @ 7450' IN 7 MIN. 400 DIFF PSI. RIH TAG FILL @ 7825'. C/O 25 OF SND. FCP = 50 PSI.
								CBP #2) DRLG OUT HAL 8K CBP @ 7850' IN 10 MIN. 500 DIFF PSI. RIH TAG FILL @ 8203'. C/O 25' OF SND. FCP = 50 PSI.
								CBP #3) DRLG OUT HAL 8K CBP @ 8228' IN 15 MIN. 250 DIFF PSI. RIH TAG FILL @ 8462'. C/O 20' OF SND. FCP = 75 PSI.
								CBP #4) DRLG OUT HAL 8K CBP @ 8482' IN 9 MIN. 400 DIFF PSI. RIH TAG FILL @ 8949'. C/O 25' OF SND. FCP = 150 PSI.
								CBP #5) DRLG OUT HAL 8K CBP @ 8974' IN 10 MIN. 600 DIFF PSI. RIH TAG FILL @ 9308'. C/O 20 OF SND. FCP = 200 PSI.
								CBP #6) DRLG OUT HAL 8K CBP @ 9328' IN 8 MIN. 900 DIFF PSI. RIH TAG FILL @ 9635'. C/O 25' OF SND. FCP = 150 PSI.
								CBP #7) DRLG OUT HAL 8K CBP @ 9660' IN 10 MIN. 700 DIFF PSI. RIH TO 10223' (263' BELOW BTM PERF) FCP = 100 PSI.
								ND PWR SWVL, NU TBG EQUIP. LD 25 JTS ON FLOAT, (30 TOTAL ON FLOAT). LND TBG ON HNGR W/ 297 JTS NEW 2 3/8" 4.7# L-80. RD FLOOR & TBG EQUIP. ND BOP, DROP BALL, NUWH. PMP OFF BIT @ 2800 PSI. WAIT 30 MIN FOR BIT TO FALL TO BTM. TURN WELL OVER TO FBC.
								SICP-1700#, SITP- 100# RDMO,PREP TO RU ON NBU 921-15C4S.
								KB 13' HANGER 0.83' TBG 297 JTS = 9414.80' POBS= 2.20'
								XN NIPPLE @ 9428.63' EOT @ 9430.83' (327JTS DLVRD - 25 JTS RTND USED 297 JTS, TRANS 5 JTS TO NBU 921-15C4S)
								OLTR = 6316 BBLS WR = 1372 BBLS LLTR = 4944 BBLS



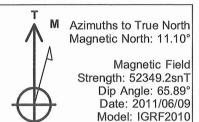
Project: Uintah County, UT UTM12 Site: NBU 921-15C PAD

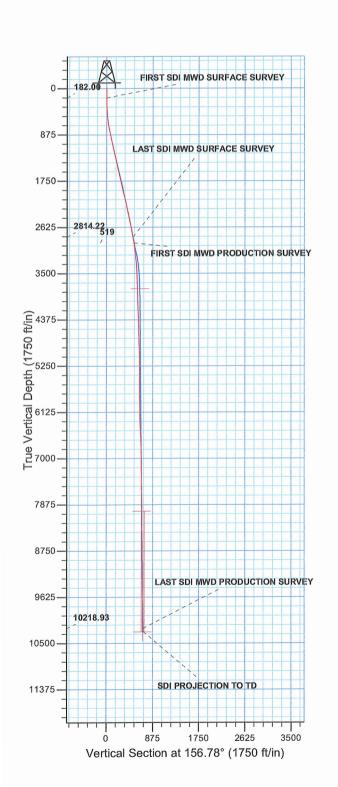
Well: NBU 921-15G2S

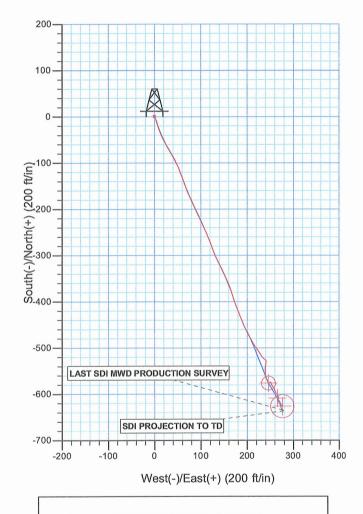
Wellbore: OH Design: OH



WELL DETAILS: NBU 921-15G2S GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145) +N/-S 0.00 +E/-W 0.00 Northing 14544378.45 Longitude 109° 32' 13.762 W Latittude







PROJECT DETAILS: Uintah County, UT UTM12

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US
Ellipsoid: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SECTION 15 T9S R21E

System Datum: Mean Sea Level

Design: OH (NBU 921-15G2S/OH)

Created By: RobertScott Date: 9:35, September 14 2011



# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 921-15C PAD

NBU 921-15G2S

ОН

Design: OH

### **Standard Survey Report**

14 September, 2011







Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-15C PAD NBU 921-15G2S

OΗ Wellbore: ОН Design:

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

**Survey Calculation Method:** 

Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145) GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature

EDM5000-RobertS-Local

**Project** 

Uintah County, UT UTM12

Map System: Geo Datum:

Universal Transverse Mercator (US Survey Feet)

NAD 1927 - Western US

Map Zone:

Zone 12N (114 W to 108 W)

System Datum:

Mean Sea Level

Site

NBU 921-15C PAD, SECTION 15 T9S R21E

Site Position: From:

Lat/Long

Northing: Easting:

14,544,382.90 usft 2,049,820,68 usft Latitude: Longitude: 40° 2' 28,061 N

109° 32' 14.269 W

**Position Uncertainty:** 

0.00 ft

Slot Radius:

13.200 in

**Grid Convergence:** 

0.94

Well **Well Position**  NBU 921-15G2S, 838 FNL 2631 FWL

0.00 ft 0.00 ft Northing: Easting:

14.544.378.45 usft 2,049,860.23 usft Latitude: Longitude:

40° 2' 28.010 N 109° 32' 13.762 W

**Position Uncertainty** 

0.00 ft

Wellhead Elevation:

ft

11.10

**Ground Level:** 

4,792.00 ft

Wellbore

ОН

ОН

+N/-S

+E/-W

Magnetics

Model Name

Sample Date

2011/06/09

0.00

Declination (°)

**Dip Angle** (°)

Field Strength

(nT)

65.89

52,349

Design

**Audit Notes:** 

Version:

1.0

Phase:

ACTUAL

Tie On Depth:

0.00

0.00

Vertical Section:

Depth From (TVD)

**IGRF2010** 

+N/-S (ft)

+F/.W

Direction (°)

156.78

**Survey Program** 

Date 2011/09/14

From (ft)

To (ft)

Survey (Wellbore)

**Tool Name** 

0.00

Description

5,00 2,976.00

2,867.00 Survey #1 SDI MWD SURFACE (OH) 10,337.00 Survey #2 SDI MWD PRODUCTION (OH) MWD SDI MWD SDI MWD - Standard ver 1.0.1 MWD - Standard ver 1.0.1

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
<b>(ft</b> )	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
182.00	0.44	321.51	182.00	0.53	-0.42	-0.66	0.25	0.25	0.00
FIRST SDI N	IWD SURFACE	SURVEY							
273.00	0,81	126.52	273.00	0.42	-0.12	-0.44	1.36	0.41	181.33
366.00	2.77	156.25	365.95	-2.03	1.31	2.38	2.26	2.11	31.97
461.00	4.24	160.71	460.77	-7.44	3.39	8.18	1.57	1.55	4.69
556.00	6.31	163.57	555.36	-15.76	6.03	16.87	2.20	2.18	3.01
652,00	8.04	158.87	650,61	-27.09	9.94	28.81	1.90	1.80	-4.90
747.00	9.80	156.42	744.45	-40.70	15,57	43.54	1.89	1.85	-2.58





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-15C PAD NBU 921-15G2S

Wellbore: Design: OH OH Local Co-ordinate Reference:

**Survey Calculation Method:** 

TVD Reference: MD Reference:

North Reference:

Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature
EDM5000-RobertS-Local

No.   Part   P	Measured			Vertical			Vertical	Dogleg	Build	Turn
842.00 11.48 151.73 837.82 -56.43 23.29 61.04 1.99 1.77 -4.99 937.00 12.42 150.16 930.76 -73.62 32.85 80.61 1.05 0.99 1.66 1,031.00 13.15 150.84 1,022.43 -91.73 43.09 101.29 0.79 0.78 0.77 1,127.00 13.09 150.73 1,115.30 -111.46 52.18 123.01 2.10 -0.06 9.22 1,222.00 14.15 150.11 1,208.26 -132.40 60.05 148.35 1.13 1.12 -0.68 1,317.00 13.84 158.55 1,300.44 -153.83 68.34 168.31 0.36 -0.33 -0.55 1,317.00 13.84 158.55 1,300.44 -153.83 68.34 168.31 0.36 -0.75 -3.22 1,508.00 12.89 155.49 1,408.36 -193.87 85.94 212.05 0.24 -0.24 0.00 1,604.00 13.08 154.47 1,579.80 -213.42 95.07 233.61 0.31 0.20 -1.06 1,608.00 13.12 156.21 157.14 -223.78 10.39 248.91 0.42 0.04 1.88 1,709.30 12.22 157.00 1,744.14 -251.90 112.23 275.75 0.96 -0.55 0.88 1,887.00 12.24 159.26 1,866.01 -270.38 118.65 256.65 0.51 0.42 0.02 2.44 1,898.00 13.12 156.91 1,948.66 -290.05 127.03 316.83 1.13 1.13 0.33 2,077.00 13.09 153.45 2,041.15 -309.92 135.64 338.30 1.50 -0.23 -6.44 2,173.00 12.76 153.89 2,141.72 -322.16 153.90 381.01 0.97 0.40 3.94 2,268.00 13.14 157.63 2,227.30 348.57 153.90 381.01 0.97 0.40 3.94 2,268.00 13.14 157.63 2,227.30 348.57 153.90 381.01 0.97 0.40 3.94 2,68.00 11.86 161.79 2,410.90 -388.17 188.78 421.43 1.16 -0.53 4.92 2,742.00 11.06 160.95 2,604.02 403.97 174.77 440.15 0.98 -0.97 0.40 3.94 2,68.00 10.84 156.41 2,782.79 454.41 194.77 494.39 0.35 -0.17 -0.66 2,835.00 10.84 156.41 2,782.79 454.41 194.77 494.39 0.35 -0.17 -1.67 2,835.00 10.84 156.41 2,782.79 454.41 194.77 494.39 0.35 -0.17 -1.67 3,248.00 5.01 1.85 153.99 2,814.22 459.87 197.30 500.41 1.42 0.03 7.55 448.45 0.00 3.87 144.13 3,815.75 -503.30 220.97 568.74 0.36 0.36 -0.23 -2.55 3,429.00 3.99 148.65 3,522.82 -50.94 220.03 57.26 0.85 -0.85 -0.22 3.44 2,489.00 1.084 156.41 2,782.79 456.41 194.77 494.39 0.35 -0.17 -1.67 3,339.00 4.26 144.93 3,011.74 487.47 211.77 531.47 1.97 -1.02 -3.17 3,750.00 8.81 152.28 2,921.61 476.89 205.68 518.98 1.89 -1.87 -1.57 4,240.00 3.99 148.65 3,372.21 544.72 231.57 560.30 567.26 0.85 -0.02 -0.03 1.16 3,361.00 3.22 128.25 3,552.83 523.89 238.89 574.	경기 보면 보는 경기 없었다. 그 경기 없는 것이 없는 것이 없는 것이 없는 것이 없다.	经通货的 电影的 医乳色 医皮肤皮肤 电电影电影器	沙海流行 人名英格兰姓氏 人名英格兰人姓氏			하는 한 가장 살았다. 원기원은 회원				
1,031.00 13.15 150.84 1,022.43 -91.73 43.09 101.29 0.78 0.78 0.77 1,127.00 13.09 159.73 1,115.83 -111.46 52.18 123.01 2.10 -0.08 9.28 1,222.00 14.15 159.11 1,208.26 -132.40 60.05 145.35 1.13 1.12 -0.68 1,317.00 13.14 159.55 1,300.44 -159.38 68.34 168.31 0.36 -0.33 -0.55 1,317.00 13.14 159.55 1,300.44 -159.38 68.34 168.31 0.36 -0.33 -0.55 1,508.00 12.89 155.49 1,486.36 -139.87 85.94 212.05 0.24 -0.24 -0.04 1,608.00 12.89 155.49 1,486.36 -139.87 85.94 212.05 0.24 -0.24 -0.04 1,608.00 13.08 154.47 1,579.90 -213.42 95.07 233.61 0.31 0.20 -1.00 1,608.00 13.12 156.21 1,671.46 -222.78 103.96 254.91 0.42 0.42 0.4 1,608.00 13.12 156.21 1,671.46 -222.78 103.96 254.91 0.42 0.42 0.4 1,608.00 13.12 156.21 1,671.46 -225.190 112.23 275.75 0.96 -0.95 0.85 1,897.00 12.24 159.26 1,856.01 -270.38 119.65 295.65 0.51 0.00 2 2.44 1,982.00 13.31 159.91 1,1948.66 -200.05 127.03 316.63 1.13 1.13 1.13 0.33 1,207.00 13.09 153.45 2,041.15 3.09.92 138.64 338.30 1.50 -0.23 -6.46 2,288.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 0.39 2,288.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 0.39 2,288.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 0.39 2,288.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 0.39 2,285.00 13.14 157.63 159.89 2,134.72 -329.16 145.17 359.74 0.36 -0.34 0.44 0.44 1.85 1.79 1.79 1.79 1.79 1.79 1.79 1.79 1.79			DESCRIPTION OF THE	837.82		23.29	61.04	1.99	1.77	-4.94
1,127.00	937.00	12.42	150.15	930.76	-73.62	32.85	80.61	1.05	0.99	-1.66
1.222.00 14.15 159.11 1,208.26 -132.40 60.05 145.35 1.13 1.12 -0.68 1.317.00 13.84 158.55 1,300.44 -153.83 68.34 168.31 0.36 -0.33 -0.56 1.317.00 13.84 158.55 1,300.44 -153.83 68.34 168.31 0.36 -0.33 -0.56 1.500.00 12.89 155.49 1,486.36 -193.87 85.94 212.05 0.24 -0.24 -0.24 1.508.00 12.89 155.49 1,486.36 -193.87 85.94 212.05 0.24 -0.24 -0.24 1.508.00 13.08 154.47 1,579.90 -213.42 95.07 233.61 0.31 0.20 -1.00 1.508.00 13.12 159.21 1,671.46 -232.78 103.96 254.91 0.42 0.42 0.44 1.88 1.793.00 12.22 157.00 1,764.14 -251.90 112.23 276.75 0.96 -0.95 0.88 1.793.00 12.22 157.00 1,764.14 -251.90 112.23 276.75 0.96 -0.95 0.88 1.892.00 13.31 159.61 1,946.66 -290.05 127.03 316.63 1.13 1.13 1.13 0.30 1.20 0.20 1.30.90 153.45 2.041.15 -30.99.2 135.64 338.30 1.50 -0.23 -0.44 2.268.00 13.14 157.63 2.227.30 -348.57 153.90 381.01 0.97 0.40 3.99 1.22 2.369.00 12.26 1.359.00 12.36 1.3	1,031.00	13.15	150.84	1,022.43	-91.73	43.09	101.29	0.79	0.78	0.73
1,317.00	1,127.00	13.09	159.73	1,115.93	-111.46	52.18	123.01	2.10	-0.06	9,26
1,413.00 13.12 155.45 1,393.79 -174.43 77.07 190.88 1.06 -0.75 -3.25 1,508.00 12.89 155.49 1,486.36 -193.87 85.94 212.05 0.24 -0.24 0.04 1.86 1,608.00 13.12 156.21 1,671.46 -232.78 103.96 254.91 0.42 0.04 1.88 1,793.00 12.22 157.00 1,764.14 -251.90 112.23 275.75 0.96 -0.95 0.85 1,887.00 12.24 159.26 1,866.01 -270.38 119.65 295.65 0.51 0.02 2.46 1,982.00 13.31 159.61 1,948.06 -290.05 127.03 316.63 1.13 1.13 0.33 2,077.00 13.09 153.45 2,041.15 -309.92 135.64 338.30 1.50 0.23 6.44 2,268.00 13.14 157.68 2,227.30 -346.57 153.90 381.01 0.97 0.40 3.94 2,268.00 13.14 157.68 2,227.30 -346.57 153.90 381.01 0.97 0.40 3.94 2,268.00 11.88 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,565.00 11.86 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,565.00 11.86 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,565.00 11.86 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,565.00 11.86 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,564.00 11.86 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,564.00 11.86 161.79 2,410.90 -366.17 168.78 421.43 1.16 0.53 4.95 2,564.00 11.86 163.99 2,564.02 403.97 174.77 440.15 0.98 0.97 -0.88 2,647.00 11.16 168.48 2,588.24 421.22 181.16 485.52 0.54 0.23 2.55 2,742.00 11.00 157.81 2,561.47 438.17 187.94 476.77 0.20 -0.17 -0.66 12.835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,897.00 0.86 153.99 2,514.22 459.87 197.30 500.41 1.42 0.03 7.75 1.45 1.85 1.98 1.98 1.89 -1.87 1.57 1.57 1.87 1.97 1.92 3.13 3.39.00 4.28 144.93 3.282.45 5.99.40 226.03 567.26 0.85 0.85 0.85 0.90 1.90 0.90 1.33 3.39.00 4.28 144.93 3.282.45 5.99.40 228.03 567.26 0.85 0.85 0.85 0.80 1.90 0.90 1.33 3.39.00 3.28 145.16 3.463.00 5.99 2.281.4 5.99.87 1.97 5.91.4 1.99 1.90 0.30 1.90 0.90 1.33 3.39.00 3.28 145.16 3.463.00 5.99 2.281.4 5.99.87 1.97 5.90 3.30 0.00 7.08 149.43 3.282.45 5.99.40 2.28 0.35 57.28 0.85 0.85 0.30 0.90 1.90 0.90 1.33 3.39.00 3.87 145.16 3.463.00 5.99 2.28 3.37 5.99.40 0.30 567.40 0.30 0.30 1.90 0.30 1.90 0.30 1.90 0.30 1.90 0.30 1.90 0.30 1.90 0.30 1	1,222.00	14.15	159.11	1,208.26	-132.40	60.05	145.35	1.13	1.12	-0.65
1,508.00 12.89 155.49 1,486.36 -193.67 85.94 212.05 0.24 -0.24 0.04 1.804.00 13.08 154.47 1,579.90 -213.42 95.07 233.81 0.31 0.20 -1.06 1,698.00 13.12 159.21 1,697.46 -232.78 103.96 254.91 0.42 0.04 1.81 1,793.00 12.22 157.00 1,764.14 -251.90 112.23 275.75 0.96 -0.95 0.85 1,887.00 12.24 159.26 1,886.01 -270.38 119.65 295.65 0.51 0.02 2.44 1,982.00 13.31 159.81 1,948.66 -290.05 127.03 316.63 1.13 1.13 0.33 2,077.00 13.09 153.45 2.041.15 -309.92 135.64 338.30 1.50 -0.23 -6.44 2,173.00 12.76 153.89 2,134.72 -329.16 145.17 359.74 0.36 -0.34 0.46 2,288.00 13.14 157.63 2,227.30 -348.57 158.39 381.01 0.97 0.40 3.99 1.23 1.25 157.21 2.319.96 -387.92 151.94 401.97 0.84 -0.83 -0.44 2,486.00 11.86 161.79 2.410.90 -386.17 168.78 421.43 1.16 -0.53 4.56 2,640.00 11.86 161.79 2.410.90 -386.17 168.78 421.43 1.16 -0.53 4.56 2,640.00 11.80 161.79 2.410.90 -386.17 168.78 421.43 1.16 -0.53 4.56 2,647.00 11.10 157.91 2.691.47 -438.17 187.94 476.77 0.20 -0.17 -0.86 2,847.00 11.10 157.91 2.691.47 -438.17 187.94 476.77 0.20 -0.17 -0.86 2,855.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,875.00 8.81 152.28 2,598.24 -459.87 197.30 50.41 1.42 0.03 -7.56 1.85 1.85 1.85 1.85 1.85 1.85 1.85 1.85	1,317.00	13.84	158.55	1,300.44	-153.83	68.34	168.31	0.36	-0.33	-0.59
1,804.00 13.08 154.47 1,579.90 -213.42 95.07 233.61 0.31 0.20 -1.06 1,898.00 13.12 156.21 1,671.46 -232.78 103.96 254.91 0.42 0.04 1.88 1,793.00 12.22 157.00 1,794.14 -251.90 112.23 275.75 0.99 -0.95 0.88 1,897.00 12.24 159.26 1,856.01 -270.38 119.65 295.65 0.51 0.02 2.44 1,982.00 13.31 159.81 1,948.96 -290.05 127.03 316.63 1.13 1.13 0.33 2,077.00 13.09 153.45 2,041.15 -309.92 135.64 338.30 1.50 -0.23 -6.44 2,248.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.94 2,288.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.94 2,486.00 11.86 161.79 2,410.90 -386.17 168.78 421.43 1.16 -0.65 4.92 2,551.00 10.94 160.95 2,504.02 -403.97 174.77 440.15 0.98 -0.97 -0.84 2,645.00 11.16 168.48 2,588.24 -421.22 181.16 456.52 0.54 0.23 -2.55 2,742.00 11.00 157.91 2,691.47 -438.17 187.94 476.77 0.20 -0.17 -0.66 2,875.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,875.00 10.84 158.49 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56 12.87 5.00 10.84 158.29 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56 12.87 5.00 10.84 168.49 3,301.74 -487.47 211.77 531.47 1.97 1.92 -3.15 1.92 1.92 1.92 1.92 1.92 1.92 1.92 1.92	1,413.00	13.12	155.45	1,393.79	-174.43	77.07	190.68	1.06	-0.75	-3.23
1,698.00 13.12 158.21 1,671.46 -232.78 103.96 254.91 0.42 0.04 1.85 1,793.00 12.22 157.00 1,764.14 -251.90 112.23 275.75 0.96 -0.95 0.85 1,867.00 12.24 159.26 1,866.01 -270.38 119.65 295.65 0.51 0.02 2.45 1,982.00 13.31 159.81 1,948.86 -290.05 127.03 316.63 1.13 1.13 0.37 1,982.00 13.31 159.81 1,948.86 -290.05 127.03 316.63 1.13 1.13 0.37 1,982.00 12.76 153.89 2,134.72 -329.16 145.17 369.74 0.36 -0.34 0.44 2,288.00 11.34 157.83 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.99 2,383.00 12.35 157.21 2,319.96 -367.92 181.94 401.97 0.84 -0.83 -0.44 2,456.00 11.86 161.79 2,410.90 -386.17 168.78 421.43 1.16 -0.55 4.95 2,551.00 10.94 180.95 2,504.02 403.97 174.77 440.15 0.98 -0.97 0.88 1,274.00 11.16 158.48 2,598.24 421.22 181.16 458.52 0.54 0.23 -2.55 1,742.00 11.00 157.91 2,681.47 438.17 187.94 476.77 0.20 -0.17 -0.66 1.285 0.00 10.84 156.41 2,782.79 454.41 194.77 494.39 0.35 -0.17 1.67 2,867.00 10.85 153.99 2,814.22 459.87 197.30 500.41 1.42 0.03 7.56 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45	1,508.00	12.89	155.49	1,486.36	-193.87	85.94	212.05	0.24	-0.24	0.04
1,793.00 12.22 157.00 1,764.14 -251.90 112.23 275.75 0.96 -0.95 0.85  1,887.00 12.24 159.26 1,856.01 -270.38 119.65 295.65 0.51 0.02 2.44  1,982.00 13.31 159.61 1,948.66 -290.05 127.03 316.63 1.13 1.13 0.33  2,077.00 13.09 153.45 2,041.15 -309.92 155.64 338.30 1.50 -0.23 -6.48  2,173.00 12.76 153.89 2,134.72 -329.16 145.17 359.74 0.36 -0.34 0.44  2,286.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.94  2,383.00 12.35 157.21 2,319.96 -367.92 161.94 401.97 0.84 -0.83 -0.44  2,456.00 11.86 161.79 2,410.90 -386.17 186.78 421.43 1.16 -0.53 4.96  2,551.00 10.94 160.95 2,504.02 -403.97 174.77 440.15 0.98 -0.97 -0.86  2,742.00 11.16 158.48 2,598.24 -421.22 181.16 456.52 0.54 0.23 -2.55  2,742.00 11.00 157.91 2,691.47 -438.47 187.94 476.77 0.20 -0.17 -0.66  2,835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67  2,975.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.67  3,157.00 7.06 149.43 3,011.74 -487.47 211.77 531.47 1.97 -1.92 -3.15  3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33  3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33  3,290.0 4.26 144.93 3,282.45 -509.40 226.03 557.26 0.85 -0.62 -2.55  3,290.0 3.89 146.65 3,372.21 -514.75 229.67 563.81 0.33 -0.30 1.97  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 3.52  3,791.00 1.01 172.85 3,733.69	1,604.00	13.08	154.47	1,579.90	-213.42	95.07	233.61	0.31	0.20	-1.06
1,793.00 12.22 157.00 1,764.14 -251.90 112.23 275.75 0.96 -0.95 0.85  1,867.00 12.24 159.26 1,856.01 -270.38 119.65 295.65 0.51 0.02 2.46  1,982.00 13.31 159.61 1,948.66 -290.05 127.03 316.63 1.13 1.13 0.33  2,077.00 13.09 159.45 2,041.15 -309.92 135.64 338.30 1.50 -0.23 -6.44  2,173.00 12.76 153.89 2,134.72 -329.16 145.17 359.74 0.36 -0.34 0.46  2,268.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.96  2,363.00 12.35 157.21 2,319.96 367.92 18.87 4 0.97 0.84 -0.83 -0.44  2,456.00 118.6 161.79 2,410.90 -386.17 168.78 421.43 1.16 -0.53 4.96  2,551.00 10.94 160.95 2,504.02 -403.97 174.77 440.15 0.98 -0.97 -0.86  2,647.00 11.16 158.48 2,598.24 -421.22 181.16 458.52 0.54 0.23 -2.57  2,742.00 11.00 157.91 2,691.47 -438.17 187.94 476.87 0.20 -0.17 -0.66  2,835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 1.67  2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56  LAST SDI MWD SURFACE SURVEY  2,976.00 8.81 152.28 2,921.61 -476.48 205.88 518.98 1.89 -1.87 -1.92 -3.15  FIRST SDI MWD PRODUCTION SURVEY  3,067.00 7.06 149.43 3,011.74 -487.47 211.77 541.51 1.35 -1.28 -3.75  2,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33  3,339.00 4.26 144.93 3,282.45 -509.40 228.03 557.26 0.85 -0.82 -2.56  3,428.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33  3,590.00 3.87 145.16 3,463.00 -519.2 233.17 569.74 0.17 -0.17 -0.18  3,791.00 1.01 172.85 3,733.69 -529.15 241.94 550.03 1.00 -0.99 1.33  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 561.41 1.69 -1.41 35.23  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 561.41 1.69 -1.41 35.23  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 561.41 1.69 -1.41 35.23  4,164.00 1.99 182.07 4,066.56 -536.56 240.00 567.15 0.32 0.30 3.60  4,164.00 1.99 182.07 4,066.56 -536.56 240.00 567.15 0.32 0.30 3.60  4,164.00 1.99 182.07 4,066.56 -536.56 240.00 567.15 0.32 0.30 3.40  4,164.00 1.99 182.07 4,066.56 -536.56 240.00 567.15 0.32 0.00 1.90 0.01	•	13,12	156.21	1,671.46	-232.78	103.96	254.91	0,42	0.04	1.85
1,982,00	•				-251.90	112.23	275.75	0.96	-0.95	0.83
1,982.00 13.31 159.61 1,948.66 -290.05 127.03 316.63 1.13 1.13 0.33 2.077.00 13.09 153.45 2.041.15 -309.92 135.64 338.30 1.50 -0.23 -6.48 2.173.00 12.76 153.89 2.134.72 -329.16 145.17 359.74 0.36 -0.34 0.44 2.268.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.94 2.468.00 13.14 157.63 2,227.30 -348.57 153.90 381.01 0.97 0.40 3.94 2.468.00 11.86 181.79 2.410.90 -386.17 188.78 421.43 1.16 -0.53 4.96 2.561.00 10.94 160.95 2,504.02 403.87 174.77 440.15 0.98 0.97 0.90 2.261.00 11.16 168.48 2.598.24 421.22 181.16 456.52 0.54 0.23 2.25 2.742.00 11.00 157.91 2.691.47 438.17 187.94 476.77 0.20 -0.17 0.60 2.855.00 10.84 156.41 2.782.79 445.41 194.77 494.39 0.35 -0.17 -1.67 2.867.00 10.85 153.99 2.814.22 459.87 197.30 500.41 1.42 0.03 -7.56 ELAST SDI MWOD SURFACE SURVEY 2.976.00 8.81 152.28 2.921.61 476.48 205.68 518.98 1.89 -1.87 -1.55 FIRST SDI MWOD PRODUCTION SURVEY 3.067.00 7.06 149.43 3.011.74 487.47 211.77 531.47 1.97 -1.92 -3.13 3.157.00 5.91 146.02 3.101.16 486.07 217.17 541.51 1.35 -1.28 -3.73 3.248.00 3.99 146.65 3.372.21 -514.75 229.67 563.61 0.33 -0.30 1.99 1.33 3.39.00 4.26 144.93 3.282.45 -509.40 226.03 557.26 0.86 -0.86 -0.92 -2.55 3.429.00 3.89 146.65 3.372.21 -514.75 229.67 563.61 0.33 -0.30 1.99 3.500.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.620.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.74 0.17 0.10 -0.13 -1.66 3.520.00 3.87 145.16 3.463.00 -519.92 233.17 569.	1,887.00	12,24	159.26	1,856.01	-270.38	119.65	295.65	0.51	0.02	2,40
2,077.00	•				-290.05	127.03	316.63	1.13	1.13	0.37
2,173,00 12,76 153,89 2,134,72 -329,16 145,17 359,74 0.36 -0.34 0.46 2,268,00 13,14 157,63 2,227,30 -348,57 153,90 381,01 0.97 0.40 3.99   2,963,00 12,35 157,21 2,319,96 -367,92 161,94 401,97 0.84 -0.83 -0.44 2,466,00 11,86 161,79 2,410,90 -386,17 168,78 421,43 1.16 -0.53 4.99   2,551,00 10,94 160,95 2,504,02 -403,97 174,77 440,15 0.98 -0.97 -0.88   2,647,00 11,16 158,48 2,598,24 -421,22 181,16 458,52 0.54 0.23 -2.57   2,742,00 11,00 157,91 2,691,47 -438,17 187,94 476,77 0.20 -0.17 -0.66   2,835,00 10,84 156,41 2,782,79 -454,41 194,77 494,39 0.35 -0.17 -1.67   2,867,00 10,85 153,99 2,814,22 -459,87 197,30 500,41 1.42 0.03 -7.56   12AST SDI MWD SURFACE SURVEY   2,976,00 8,81 152,28 2,921,61 -476,48 205,68 518,98 1.89 -1.87 -1.97   3,067,00 7,06 149,43 3,011,74 -487,47 211,77 531,47 1.97 -1.92 -3.15   3,157,00 5,91 146,02 3,101,16 -496,07 217,17 541,51 1.35 -1.28   3,248,00 5,01 147,22 3,191,75 -503,30 221,94 550,03 1.00 -0.99 1.33   3,339,00 4,26 144,93 3,282,45 -509,40 226,03 557,26 0.85 -0.82 -2.55   3,429,00 3,99 146,65 3,372,21 -514,75 229,67 563,61 0.33 -0.30 1.97   3,520,00 3,87 145,16 3,463,00 -519,92 233,17 569,74 0.17 -0.13 -1.60   3,610,00 3,22 128,25 3,552,83 -523,98 236,89 574,93 1.36 -0.72 -18.77   3,791,00 1.01 172,25 3,733,69 -529,15 241,26 581,41 1.99 -1.41 552,23 3,993,00 1.43 188,85 3,824,67 -531,03 241,19 583,10 0.54 0.41 175,64   3,973,00 1.43 186,41 3,915,64 -533,24 240,91 585,00 0.19 10.01 175,65 3,733,60 -541,27 240,00 1.99 192,07 4,096,56 -538,56 240,07 599,58 0.34 0.32 0.30 3.61 4,244,00 2.10 187,94 4,186,50 -541,72 239,51 595,20 0.19 0.01 0.01 -514,44   4,335,00 2.11 183,26 4,277,44 -546,04 239,19 595,20 0.19 0.01	-	13.09	153.45	2,041.15	-309.92	135.64	338.30	1.50	-0.23	-6.48
2,288,00 13,14 157,63 2,227,30 -348,57 153,90 381,01 0.97 0.40 3.94 2,363,00 12,35 157,21 2,319,96 -367,92 161,94 401,97 0.84 -0.83 -0.44 2,456,00 11,86 161,79 2,410,90 -386,17 168,78 421,43 1.16 -0.53 4.92 2,551,00 10,94 160,95 2,504,02 -403,97 174,77 440,15 0.98 -0.97 -0.81 2,647,00 11,16 158,48 2,598,24 -421,22 181,16 458,52 0.54 0.23 -2.57 2,742,00 11,00 157,91 2,691,47 -438,17 187,94 476,77 0.20 -0.17 -0.60 2,835,00 10,84 156,41 2,782,79 -454,41 194,77 494,39 0.35 -0.17 -1.67 2,867,00 10,85 153,99 2,814,22 -459,87 197,30 500,41 1,42 0.03 -7.56  LAST SDI MWD SURFACE SURVEY 2,976,00 8,81 152,28 2,921,61 -476,48 205,68 518,98 1.89 -1.87 -1.57 3,167,00 7,06 149,43 3,011,74 -487,47 211,77 531,47 1.97 -1.92 -3.13 3,167,00 5,91 146,02 3,101,16 -496,07 217,17 541,51 1.35 -1.28 -3.73 3,248,00 5,01 147,22 3,191,75 -503,30 221,94 550,03 1.00 -0.99 1.33 3,339,00 4,26 144,93 3,282,45 -509,40 226,03 557,26 0.85 -0.82 -2.55 3,429,00 3,87 145,16 3,463,00 -519,92 233,17 569,74 0.17 -0.13 -1.63 3,610,00 3,22 128,25 3,552,83 -523,98 233,17 569,74 0.17 -0.13 -1.63 3,791,00 1.01 172,85 3,733,69 -529,15 241,26 581,41 1.69 -1.41 35,21 3,973,00 1.43 188,85 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,67 -531,03 241,19 583,10 0.54 0.41 17,51 3,973,00 1.43 188,45 3,824,	•	12.76	153.89	2,134.72	-329.16	145.17	359.74	0.36	-0.34	0.46
2,456.00 11.86 161.79 2,410.90 -386.17 168.78 421.43 1.16 -0.53 4.92 2,551.00 10.94 160.95 2,504.02 -403.97 174.77 440.15 0.98 -0.97 -0.86 2,647.00 11.16 158.48 2,598.24 -421.22 181.16 458.52 0.54 0.23 -2.55 2,742.00 11.00 167.91 2,691.47 -438.17 187.94 476.77 0.20 -0.17 -0.66 2,742.00 11.00 167.91 2,691.47 -438.17 187.94 476.77 0.20 -0.17 -0.66 2,867.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56 1.28 1.28 1.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57		13.14	157.63	2,227.30	-348.57	153.90	381.01	0.97	0.40	3.94
2,551.00 10.94 160.95 2,504.02 -403.97 174.77 440.15 0.98 -0.97 -0.86 2,647.00 11.16 158.48 2,598.24 -421.22 181.16 458.52 0.54 0.23 -2.55 2,742.00 11.00 157.91 2,691.47 -438.17 187.94 476.77 0.20 -0.17 -0.60 2,835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56 1 1.45 1 1.	2,363.00	12.35	157.21	2,319.96	-367.92	161.94	401.97	0.84	-0.83	-0.44
2,647.00 11.16 168.48 2,598.24 -421.22 181.16 458.52 0.54 0.23 -2.57 2,742.00 11.00 157.91 2,691.47 -438.17 187.94 476.77 0.20 -0.17 -0.60 2,835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56 2,967.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.67 -1.57 2,976.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.57 3,075.00 7.06 149.43 3,011.74 -487.47 211.77 531.47 1.97 -1.92 -3.13 3,157.00 5.91 146.02 3,101.16 -496.07 217.17 541.51 1.35 -1.28 -3.73 3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33 3,339.00 4.26 144.93 3,282.45 -509.40 226.03 557.26 0.85 -0.82 -2.55 3,429.00 3.99 146.65 3,372.21 -514.75 229.67 563.61 0.33 -0.30 1.97 3,520.00 3.87 145.16 3,463.00 -519.92 233.17 569.74 0.17 -0.13 -1.64 3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -1.87 3,791.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.15 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,791.00 1.01 172.85 3,733.69 -529.15 2	2,456.00	11.86	161.79	2,410.90	-386.17	168.78	421.43	1.16	-0.53	4.92
2,742.00 11.00 157.91 2,691.47 -438.17 187.94 476.77 0.20 -0.17 -0.60  2,835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67  2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56  LAST SDI MWD SURFACE SURVEY  2,976.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.57  FIRST SDI MWD PRODUCTION SURVEY  3,067.00 7.06 149.43 3,011.74 -487.47 211.77 531.47 1.97 -1.92 -3.13  3,157.00 5.91 146.02 3,101.16 -496.07 217.17 541.51 1.35 -1.28 -3.78  3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33  3,339.00 4.26 144.93 3,282.45 -509.40 226.03 557.26 0.85 -0.82 -2.55  3,429.00 3.99 146.65 3,372.21 -514.75 229.67 563.61 0.33 -0.30 1.90  3,520.00 3.87 145.16 3,463.00 -519.92 233.17 569.74 0.17 -0.13 -1.64  3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -187.64  3,701.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.13  3,791.00 1.01 172.85 3,733.69 -526.15 241.26 581.41 1.69 -1.41 35.27  3,882.00 1.38 188.85 3,824.67 -531.03 241.19 585.03 0.11 0.05 -3.74  4,063.00 1.70 188.73 4,005.61 -535.68 240.00 587.15 0.32 0.30 3.66  4,154.00 1.99 192.07 4,096.56 -538.56 240.07 589.58 0.34 0.32 3.66  4,154.00 1.99 192.07 4,096.56 -538.56 240.07 589.58 0.34 0.32 3.66  4,154.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.12 -4.56  4,244.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.12 -4.56  4,335.00 2.11 183.26 4,277.44 -545.04 239.19 595.20 0.19 0.01	2,551.00	10.94	160.95	2,504.02	-403.97	174.77	440.15	0.98	-0.97	-0.88
2,835.00 10.84 156.41 2,782.79 -454.41 194.77 494.39 0.35 -0.17 -1.67 2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56 14.87 SDI MWD SURFACE SURVEY 2,976.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.57 1.57 1.57 1.57 1.57 1.57 1.57 1.57	2,647.00	11.16	158.48	2,598.24	-421.22	181.16	458.52	0.54	0.23	-2.57
2,867.00 10.85 153.99 2,814.22 -459.87 197.30 500.41 1.42 0.03 -7.56  LAST SDI MWD SURFACE SURVEY 2,976.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.67  FIRST SDI MWD PRODUCTION SURVEY 3,067.00 7.06 149.43 3,011.74 -487.47 211.77 531.47 1.97 -1.92 -3.13 3,157.00 5.91 146.02 3,101.16 -496.07 217.17 541.51 1.35 -1.28 -3.73  3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33 3,339.00 4.26 144.93 3,282.45 -509.40 226.03 557.26 0.85 -0.82 -2.53 3,429.00 3.99 146.65 3,372.21 -514.75 229.67 563.61 0.33 -0.30 1.97 3,520.00 3.87 145.16 3,463.00 -519.92 233.17 569.74 0.17 -0.13 -1.64 3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -18.78  3,701.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.13 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,882.00 1.38 188.85 3,824.67 -531.03 241.19 583.10 0.54 0.41 17.55 3,973.00 1.43 185.41 3,915.64 -533.24 240.91 585.03 0.11 0.05 -3.78 4,063.00 1.70 188.73 4,005.61 -535.68 240.60 587.15 0.32 0.30 3.66  4,154.00 1.99 192.07 4,096.56 -538.56 240.07 589.58 0.34 0.32 3.66 4,244.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.12 -4.56 4,335.00 2.11 183.26 4,277.44 -545.04 239.19 595.20 0.19 0.01	•	11,00	157.91	2,691.47	-438.17	187.94	476.77	0.20	-0.17	-0.60
LAST SDI MWD SURFACE SURVEY 2,976.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.57 FIRST SDI MWD PRODUCTION SURVEY 3,067.00 7.06 149.43 3,011.74 -487.47 211.77 531.47 1.97 -1.92 -3.13 3,157.00 5.91 146.02 3,101.16 -496.07 217.17 541.51 1.35 -1.28 -3.73 3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33 3,339.00 4.26 144.93 3,282.45 -509.40 226.03 557.26 0.85 -0.82 -2.53 3,429.00 3.99 146.65 3,372.21 -514.75 229.67 563.61 0.33 -0.30 1.97 3,520.00 3.87 145.16 3,463.00 -519.92 233.17 569.74 0.17 -0.13 -1.64 3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -18.78 3,701.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.13 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,882.00 1.38 188.85 3,824.67 -531.03 241.19 583.10 0.54 0.41 17.56 3,973.00 1.43 185.41 3,915.64 -533.24 240.91 585.03 0.11 0.05 -3.76 4,063.00 1.99 192.07 4,096.56 -536.56 240.07 589.58 0.34 0.32 3.66 4,154.00 1.99 192.07 4,096.56 -538.56 240.07 589.58 0.34 0.32 3.66 4,244.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.19 0.01 -5.14	2,835.00	10.84	156.41	2,782.79	-454.41	194.77	494.39	0.35	-0.17	-1.61
2,976.00 8.81 152.28 2,921.61 -476.48 205.68 518.98 1.89 -1.87 -1.87 -1.57    FIRST SDI MWD PRODUCTION SURVEY 3,067.00 7.06 149.43 3,011.74 -487.47 211.77 531.47 1.97 -1.92 -3.13 3,157.00 5.91 146.02 3,101.16 -496.07 217.17 541.51 1.35 -1.28 -3.75    3,248.00 5.01 147.22 3,191.75 -503.30 221.94 550.03 1.00 -0.99 1.33 3,399.00 4.26 144.93 3,282.45 -509.40 226.03 557.26 0.85 -0.82 -2.53 3,429.00 3.99 146.65 3,372.21 -514.75 229.67 563.61 0.33 -0.30 1.99 3,520.00 3.87 145.16 3,463.00 -519.92 233.17 569.74 0.17 -0.13 -1.64 3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -18.75 3,701.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.13 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,882.00 1.38 188.85 3,824.67 -531.03 241.19 583.10 0.54 0.41 17.56 3,973.00 1.43 185.41 3,915.64 -533.24 240.91 585.03 0.11 0.05 -3.76 4,063.00 1.99 192.07 4,096.56 -538.56 240.07 589.58 0.34 0.32 3.66 4,244.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.12 -4.55 4,335.00 2.11 183.26 4,277.44 -545.04 239.19 595.20 0.19 0.01 -5.14	2,867.00	10.85	153.99	2,814.22	-459.87	197.30	500.41	1.42	0.03	-7.56
FIRST SDI MWD PRODUCTION SURVEY  3,067.00	LAST SDIM	WD SURFACE S	URVEY							
3,067.00       7.06       149.43       3,011.74       -487.47       211.77       531.47       1.97       -1.92       -3.13         3,157.00       5.91       146.02       3,101.16       -496.07       217.17       541.51       1.35       -1.28       -3.73         3,248.00       5.01       147.22       3,191.75       -503.30       221.94       550.03       1.00       -0.99       1.33         3,339.00       4.26       144.93       3,282.45       -509.40       226.03       557.26       0.85       -0.82       -2.55         3,429.00       3.99       146.65       3,372.21       -514.75       229.67       563.61       0.33       -0.30       1.9°         3,520.00       3.87       145.16       3,463.00       -519.92       233.17       569.74       0.17       -0.13       -1.64         3,610.00       3.22       128.25       3,552.83       -523.98       236.89       574.93       1.36       -0.72       -18.79         3,791.00       1.01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1.38       188.85       3,824.67       -531.03 <td< td=""><td>2,976.00</td><td>8.81</td><td>152.28</td><td>2,921.61</td><td>-476.48</td><td>205.68</td><td>518.98</td><td>1.89</td><td>-1.87</td><td>-1.57</td></td<>	2,976.00	8.81	152.28	2,921.61	-476.48	205.68	518.98	1.89	-1.87	-1.57
3,157.00       5.91       146.02       3,101.16       -496.07       217.17       541.51       1.35       -1.28       -3.75         3,248.00       5.01       147.22       3,191.75       -503.30       221.94       550.03       1.00       -0.99       1.32         3,339.00       4.26       144.93       3,282.45       -509.40       226.03       557.26       0.85       -0.82       -2.52         3,429.00       3.99       146.65       3,372.21       -514.75       229.67       563.61       0.33       -0.30       1.99         3,520.00       3.87       145.16       3,463.00       -519.92       233.17       569.74       0.17       -0.13       -1.64         3,610.00       3.22       128.25       3,552.83       -523.98       236.89       574.93       1.36       -0.72       -18.76         3,701.00       2.28       141.11       3,643.73       -526.97       240.03       578.92       1.23       -1.03       14.13         3,791.00       1.01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1.38       188.85       3,824.67       -531.03 <td< td=""><td>FIRST SDI M</td><td>IWD PRODUCTION</td><td>ON SURVEY</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	FIRST SDI M	IWD PRODUCTION	ON SURVEY							
3,248.00       5.01       147.22       3,191.75       -503.30       221.94       550.03       1.00       -0.99       1.32         3,339.00       4.26       144.93       3,282.45       -509.40       226.03       557.26       0.85       -0.82       -2.52         3,429.00       3.99       146.65       3,372.21       -514.75       229.67       563.61       0.33       -0.30       1.99         3,520.00       3.87       145.16       3,463.00       -519.92       233.17       569.74       0.17       -0.13       -1.64         3,610.00       3.22       128.25       3,552.83       -523.98       236.89       574.93       1.36       -0.72       -18.79         3,701.00       2.28       141.11       3,643.73       -526.97       240.03       578.92       1.23       -1.03       14.13         3,791.00       1.01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1.38       188.85       3,824.67       -531.03       241.19       583.10       0.54       0.41       17.56         3,973.00       1.43       185.41       3,915.64       -533.24	3,067.00	7.06	149.43	3,011.74	-487.47	211.77	531.47	1.97	-1.92	-3.13
3,339.00       4.26       144.93       3,282.45       -509.40       226.03       557.26       0.85       -0.82       -2.55         3,429.00       3.99       146.65       3,372.21       -514.75       229.67       563.61       0.33       -0.30       1.97         3,520.00       3.87       145.16       3,463.00       -519.92       233.17       569.74       0.17       -0.13       -1.64         3,610.00       3.22       128.25       3,552.83       -523.98       236.89       574.93       1.36       -0.72       -18.76         3,701.00       2.28       141.11       3,643.73       -526.97       240.03       578.92       1.23       -1.03       14.13         3,791.00       1.01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1.38       188.85       3,824.67       -531.03       241.19       583.10       0.54       0.41       17.58         3,973.00       1.43       185.41       3,915.64       -533.24       240.91       585.03       0.11       0.05       -3.78         4,063.00       1.70       188.73       4,005.61       -535.68	3,157.00	5.91	146.02	3,101.16	-496.07	217.17	541,51	1,35	-1.28	-3.79
3,429.00 3.99 146.65 3,372.21 -514.75 229.67 563.61 0.33 -0.30 1.99 3,520.00 3.87 145.16 3,463.00 -519.92 233.17 569.74 0.17 -0.13 -1.64 3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -18.76 3,701.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.13 3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27 3,882.00 1.38 188.85 3,824.67 -531.03 241.19 583.10 0.54 0.41 17.56 3,973.00 1.43 185.41 3,915.64 -533.24 240.91 585.03 0.11 0.05 -3.76 4,063.00 1.70 188.73 4,005.61 -535.68 240.60 587.15 0.32 0.30 3.66 4,244.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.12 -4.55 4,335.00 2.11 183.26 4,277.44 -545.04 239.19 595.20 0.19 0.01 -5.14	3,248.00	5.01	147.22	3,191.75	-503.30	221.94	550.03	1.00	-0.99	1.32
3,520.00       3.87       145.16       3,463.00       -519.92       233.17       569.74       0.17       -0.13       -1.64         3,610.00       3.22       128.25       3,552.83       -523.98       236.89       574.93       1.36       -0.72       -18.76         3,701.00       2.28       141.11       3,643.73       -526.97       240.03       578.92       1.23       -1.03       14.13         3,791.00       1.01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1.38       188.85       3,824.67       -531.03       241.19       583.10       0.54       0.41       17.58         3,973.00       1.43       185.41       3,915.64       -533.24       240.91       585.03       0.11       0.05       -3.78         4,063.00       1.70       188.73       4,005.61       -535.68       240.60       587.15       0.32       0.30       3.69         4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239	3,339.00	4.26	144.93	3,282.45	-509.40	226.03	557,26	0.85	-0.82	-2.52
3,610.00 3.22 128.25 3,552.83 -523.98 236.89 574.93 1.36 -0.72 -18.76  3,701.00 2.28 141.11 3,643.73 -526.97 240.03 578.92 1.23 -1.03 14.13  3,791.00 1.01 172.85 3,733.69 -529.15 241.26 581.41 1.69 -1.41 35.27  3,882.00 1.38 188.85 3,824.67 -531.03 241.19 583.10 0.54 0.41 17.56  3,973.00 1.43 185.41 3,915.64 -533.24 240.91 585.03 0.11 0.05 -3.76  4,063.00 1.70 188.73 4,005.61 -535.68 240.60 587.15 0.32 0.30 3.66  4,154.00 1.99 192.07 4,096.56 -538.56 240.07 589.58 0.34 0.32 3.67  4,244.00 2.10 187.94 4,186.50 -541.72 239.51 592.27 0.20 0.12 -4.56  4,335.00 2.11 183.26 4,277.44 -545.04 239.19 595.20 0.19 0.01 -5.14	3,429.00	3.99	146.65	3,372.21	-514.75	229.67	563.61	0.33	-0.30	1.91
3,701.00       2.28       141.11       3,643.73       -526.97       240.03       578.92       1.23       -1.03       14.13         3,791.00       1.01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1.38       188.85       3,824.67       -531.03       241.19       583.10       0.54       0.41       17.56         3,973.00       1.43       185.41       3,915.64       -533.24       240.91       585.03       0.11       0.05       -3.78         4,063.00       1.70       188.73       4,005.61       -535.68       240.60       587.15       0.32       0.30       3.69         4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239.51       592.27       0.20       0.12       -4.55         4,335.00       2.11       183.26       4,277.44       -545.04       239.19       595.20       0.19       0.01       -5.14	3,520.00	3.87	145.16	3,463.00	-519.92	233,17	569,74	0.17		-1.64
3,791,00       1,01       172.85       3,733.69       -529.15       241.26       581.41       1.69       -1.41       35.27         3,882.00       1,38       188.85       3,824.67       -531.03       241.19       583.10       0.54       0.41       17.56         3,973.00       1,43       185.41       3,915.64       -533.24       240.91       585.03       0.11       0.05       -3.76         4,063.00       1.70       188.73       4,005.61       -535.68       240.60       587.15       0.32       0.30       3.66         4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239.51       592.27       0.20       0.12       -4.55         4,335.00       2.11       183.26       4,277.44       -545.04       239.19       595.20       0.19       0.01       -5.14	3,610.00	3.22	128.25	3,552.83	-523.98	236.89	574.93	1.36	-0.72	-18.79
3,882.00       1.38       188.85       3,824.67       -531.03       241.19       583.10       0.54       0.41       17.56         3,973.00       1.43       185.41       3,915.64       -533.24       240.91       585.03       0.11       0.05       -3.76         4,063.00       1.70       188.73       4,005.61       -535.68       240.60       587.15       0.32       0.30       3.66         4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239.51       592.27       0.20       0.12       -4.58         4,335.00       2.11       183.26       4,277.44       -545.04       239.19       595.20       0.19       0.01       -5.14					-526.97					14.13
3,973.00       1.43       185.41       3,915.64       -533.24       240.91       585.03       0.11       0.05       -3.76         4,063.00       1.70       188.73       4,005.61       -535.68       240.60       587.15       0.32       0.30       3.66         4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239.51       592.27       0.20       0.12       -4.58         4,335.00       2.11       183.26       4,277.44       -545.04       239.19       595.20       0.19       0.01       -5.14	3,791.00	1.01	172.85	3,733.69						35.27
4,063.00       1.70       188.73       4,005.61       -535.68       240.60       587.15       0.32       0.30       3.69         4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239.51       592.27       0.20       0.12       -4.59         4,335.00       2.11       183.26       4,277.44       -545.04       239.19       595.20       0.19       0.01       -5.14	3,882.00	1.38	188.85			241.19				17.58
4,154.00       1.99       192.07       4,096.56       -538.56       240.07       589.58       0.34       0.32       3.67         4,244.00       2.10       187.94       4,186.50       -541.72       239.51       592.27       0.20       0.12       -4.59         4,335.00       2.11       183.26       4,277.44       -545.04       239.19       595.20       0.19       0.01       -5.14	3,973.00	1.43	185,41	3,915.64	-533.24	240.91	585,03		0.05	-3.78
4,244.00     2.10     187.94     4,186.50     -541.72     239.51     592.27     0.20     0.12     -4.59       4,335.00     2.11     183.26     4,277.44     -545.04     239.19     595.20     0.19     0.01     -5.14	4,063.00	1.70	188.73	4,005.61	-535.68	240.60	587.15	0.32	0.30	3.69
4,335.00 2.11 183.26 4,277.44 -545.04 239.19 595.20 0.19 0.01 -5.14	4,154.00	1.99		4,096.56	-538.56					3.67
, and the state of	4,244.00	2.10	187.94							-4.59
4.426.00 2.16 176.18 4.368.38 -548.43 239.21 598.31 0.29 0.05 -7.78	4,335.00	2.11	183.26	4,277.44	-545.04		595.20			-5.14
greener and training greener to the control of the	4,426.00	2.16	176.18	4,368.38	-548.43	239.21	598,31	0.29	0.05	-7.78





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12 NBU 921-15C PAD

Site: Well:

NBU 921-15G2S

Wellbore: 0
Design: 0

OH OH Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145) GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature

EDM5000-RobertS-Local

у					Yan Marka				
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
		DESCRIBINATIONS		4454465444655	on during a				
4,607.00	2.22	183.79	4,549.24	-555.42	239.46	604.84	0.34	-0.03	8.74
4,697.00	2.06	177.04	4,639.18	-558.78	239.43	607.91	0.33	-0.18	-7.50 0.00
4,788.00	2.02	177.11	4,730.12	-562.01 -504.04	239.59	610.95	0.04	-0.04	0.08
4,879.00	1.76	137.03	4,821.08	-564, <del>6</del> 4	240.63	613.77	1.45	-0.29	-44,04 44.06
4,969.00	1.67	149.68	4,911.04	-566.78	242.23	616.37	0.43	-0.10	14.06
5,060.00	1.82	151.96	5,001.99	-569.20	243.58	619.13	0.18	0.16	2.51
5,150.00	1.82	158.69	5,091.95	-571.79	244.77	621.98	0.24	0.00	7,48
5,241.00	1.80	165.53	5,182.90	-574.52	245.65	624.84	0.24	-0.02	7.52
5,332.00	1,15	141.31	5,273.87	-576.62	246.58	627.13	0.97	-0.71	-26.62
5,422.00	1.06	37.36	5,363.86	-576.66	247.65	627.59	1.94	-0.10	-115.50
5,513.00	0.96	46.29	5,454.85	-575.47	248.71	626.91	0.20	-0.11	9.81
5,603.00	0.62	58.19	5,544.84	-574.69	249.67	626,57	0.42	-0.38	13.22
5,694.00	0.38	68.09	5,635.84	-574.32	250.37	626,51	0.28	-0.26	10.88
5,784.00	0.44	100.38	5,725.84	-574.27	250.99	626.71	0,26	0.07	35,88
5,875.00	0.44	109.69	5,816.83	-574.45	251.66	627.14	0.08	0,00	10.23
5,966,00	0.52	146.98	5,907.83	-574.91	252,21	627,78	0,35	0,09	40,98
6,056,00	0.59	169,92	5,997.83	-575.71	252.52	628.64	0.26	0.08	25.49
6,147.00	0.78	185.59	6,088.82	-576.79	252.54	629.63	0.29	0.21	17.22
6,238.00	0.92	189,18	6,179,81	-578.13	252.36	630.79	0.16	0.15	3.95
6,328.00	2.11	140.81	6,269.78	-580.12	253.29	633.00	1.83	1.32	-53.74
6,419.00	2.29	143.79	6,360.71	-582.89	255.43	636,38	0.23	0.20	3.27
6,509.00	2.32	147.08	6,450.64	-585.87	257.48	639.93	0.15	0.03	3.66
6,600.00	2.55	155.22	6,541.56	-589.25	259.33	643.77	0.46	0.25	8.95
6,691.00	2.46	158.12	6,632.47	-592.90	260.91	647.74	0.17	-0.10	3.19
6,781.00	2.73	159.35	6,722.38	-596.70	262.38	651.81	0.31	0.30	1.37
6,872.00	0.62	132.52	6,813.34	-599.06	263.51	654.43	2.41	-2.32	-29.48
6,963.00	0.79	132.98	6,904.33	-599.82	264.33	655.45	0.19	0.19	0.51
7,053.00	1.23	149,77	6,994.31	-601.08	265.27	656.98	0.58	0.49	18.66
7,144.00	0.18	2.47	7,085.31	-601.78	265.77	657.82	1.52	-1.15	-161.87
7,234.00	0.18	125.87	7,175.31	-601.72	265,89	657.81	0.35	0.00	137.11
7.324.00	0.34	149.44	7,265.31	-602,04	266.14	658.20	0,21	0.18	26,19
7,415.00	0.53	153.11	7,356.30	-602.64	266.47	658.89	0.21	0.21	4.03
7,506.00	0.81	160.15	7,447.30	-603.62	266.88	659,95	0.32	0.31	7.74
7,596.00	0.97	152.94	7,537.29	-604.90	267.44	661.34	0.22	0.18	-8.01
7,687.00	0,95	158,33	7,628.27	-606.29	268.07	662.87	0.10	-0.02	5.92
7,777.00	1.14	154,08	7,718.26	-607.79	268.73	664.51	0.23	0.21	-4.72
7,868.00	0.72	211.78	7,718.26	-609.09	268.83	665.74	1.07	-0.46	63.41
7,868.00	0.72	244.34	7,809.25 7,899.24	-609.69	268.28	666.07	0.52	-0.40	36,18
7,958.00 8,049.00	0.50	244.34 216.51	7,899.24 7,990.24	-609.69 -610.13	267.80	666.29	0.32	0.16	-30.58
8,049.00 8,140.00	0.62	213.49	7,990.2 <del>4</del> 8,081.24	-610.13 -610.86	267.29	666,76	0.28	0.13	-30.56
8,230.00	0.53	187.74	8,171.23	-611.67	266.96	667.38	0.30	-0.10	-28.61
8,321.00	0.67	168.00	8,262.23	-612.61	267.02	668.26	0.27	0.15	-21.69
8,411.00	0.97	170.11	8,352.22	-613.88	267.26 267.52	669.52 671.02	0.33	0.33	2.34





Company:

Kerr McGee Oil and Gas Onshore LP

Project: Site:

Well:

Uintah County, UT UTM12 NBU 921-15C PAD NBU 921-15G2S

Wellbore: Design: OH OH Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method: Database: Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature

EDM5000-RobertS-Local

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(ft)	(°)	(°)	(ft)	(ft) .	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
8,593.00	1.08	160.14	8,534.19	-616.96	267.94	672.62	0.24	0.12	-11.38
8,683.00	1.19	155.40	8,624.17	-618.61	268.61	674.40	0.16	0.12	-5.27
8,774.00	1.19	132.82	8,715.16	-620.11	269.70	676.21	0.51	0.00	-24.81
8,864.00	1.23	137.12	8,805.14	-621.45	271.04	677.98	0.11	0.04	4.78
8,955.00	88,0	171.04	8,896.12	-622.86	271.82	<del>6</del> 79.57	0.77	-0.38	37.27
9,045.00	0.88	113.00	8,986.11	-623.81	272.56	680.74	0.95	0.00	-64.49
9,136.00	0.71	96,35	9,077.10	-624.15	273.76	681.52	0.31	-0.19	-18.30
9,227.00	0.12	19.29	9,168.10	-624.12	274.35	681.73	0.76	-0.65	-84.68
9,317.00	0.59	296.49	9,258.10	-623.82	273.97	681.31	0.65	0.52	-92.00
9,408.00	0.61	309.76	9,349.09	-623.31	273.18	680,52	0.15	0.02	14.58
9,498.00	0.43	308.35	9,439.09	-622.79	272.55	679.80	0.20	-0.20	-1.57
9,589.00	0.53	215.51	9,530.09	-622.92	272.03	679.72	0.77	0.11	-102.02
9,680.00	0.79	185.86	9,621.08	-623.89	271.73	680.48	0.46	0.29	-32.58
9,770.00	1.13	167.42	9,711.07	-625.37	271.86	681.90	0,51	0.38	-20.49
9,861.00	0.88	159.57	9,802.06	-626.90	272.29	683.48	0.31	-0.27	-8.63
9,951.00	1.14	155.66	9,892.04	-628,36	272.90	685.06	0.30	0.29	-4.34
10,042.00	1.41	158.74	9,983.02	-630,23	273.68	687.09	0.31	0.30	3.38
10,133.00	1.49	148.01	10,073.99	-632.28	274.72	689.37	0.31	0.09	-11.79
10,223.00	1.76	136.31	10,163.95	-634.27	276.29	691.83	0.47	0.30	-13.00
10,278.00	1.92	126.88	10,218.93	-635.43	277.61	693.42	0.62	0.29	-17.15
LAST SDI M	WD PRODUCTIO	N SURVEY							
10,337,00	1.92	126.88	10,277.89	-636.62	279.19	695,13	0.00	0.00	0.00

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coor +N/-S (ft)	dinates +E/-W (ft)	Comment
182.00	182.00	0.53	-0.42	FIRST SDI MWD SURFACE SURVEY
2,867.00	2,814.22	<b>-</b> 459.87	197.30	LAST SDI MWD SURFACE SURVEY
2,976.00	2,921.61	-476.48	205.68	FIRST SDI MWD PRODUCTION SURVEY
10,278.00	10,218.93	-635.43	277.61	LAST SDI MWD PRODUCTION SURVEY
10,337.00	10,277.89	-636.62	279.19	SDI PROJECTION TO TD

	Checked By:	Approved By:	Date:	
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## Kerr McGee Oil and Gas Onshore

LP

Uintah County, UT UTM12 NBU 921-15C PAD NBU 921-15G2S

OH

Design: OH

### **Survey Report - Geographic**

14 September, 2011





#### SDI Survey Report - Geographic



Company:

Kerr McGee Oil and Gas Onshore LP

Project: Site:

Well:

Uintah County, UT UTM12 NBU 921-15C PAD NBU 921-15G2S

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Survey Calculation Method:

Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

Minimum Curvature EDM5000-RobertS-Local

Project Uintah County, UT UTM12

Map System: Geo Datum:

Universal Transverse Mercator (US Survey Feet)

NAD 1927 - Western US

Map Zone:

Zone 12N (114 W to 108 W)

System Datum:

Mean Sea Level

NBU 921-15C PAD, SECTION 15 T9S R21E Site

Site Position:

Northing:

14,544,382.90 usft 2.049.820.68 usft

Latitude:

40° 2' 28.061 N 109° 32' 14,269 W

Longitude: Lat/Long Easting: Grid Convergence: 0.00 ft Slot Radius: 13.200 in Position Uncertainty:

Well

NBU 921-15G2S, 838 FNL 2631 FWL

**Well Position** 

+N/-S +E/-W

0.00 ft 0.00 ft Northing: Easting:

14,544,378.45 usft 2,049,860.23 usft

11.10

Latitude: Longitude:

40° 2' 28 010 N 109° 32' 13.762 W

52.349

0.94°

0.00 ft **Ground Level:** 4,792.00 ft Wellhead Elevation: ft **Position Uncertainty** 

ОН Wellbore

Magnetics

**Model Name** 

**IGRF2010** 

Sample Date

2011/06/09

0.00

Declination (°)

0.00

Dip Angle (°)

Field Strength

(nT)

ОН

Audit Notes:

Version.

Design

1.0

Phase:

Depth From (TVD)

ACTUAL

Tie On Depth:

0.00

0.00

Vertical Section:

+N/-S (ft)

+E/-W (ft)

Direction (°)

156,78

2011/09/14 Survey Program Date

> From (ft)

To (ft)

Survey (Wellbore)

**Tool Name** 

Description

5.00 2,976.00

2,867.00 Survey #1 SDI MWD SURFACE (OH) 10,337.00 Survey #2 SDI MWD PRODUCTION (OH)

MWD SDI MWD SDI

MWD - Standard ver 1.0.1 MWD - Standard ver 1.0.1

65.89

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,544,378.45	2,049,860.23	40° 2' 28.010 N	109° 32' 13.762 V
5.00	0.00	0.00	5.00	0.00	0.00	14,544,378.45	2,049,860.23	40° 2' 28.010 N	109° 32' 13.762 V
182.00	0.44	321.51	182.00	0.53	-0.42	14,544,378.97	2,049,859.80	40° 2' 28.016 N	109° 32' 13.767 V
FIRST S	DI MWD SURF	ACE SURVE	Υ						
273.00	0.81	126.52	273.00	0.42	-0.12	14,544,378.87	2,049,860.10	40° 2' 28.015 N	109° 32' 13.763 V
366.00	2.77	156.25	365.95	-2.03	1.31	14,544,376.44	2,049,861.58	40° 2' 27.990 N	109° 32' 13.745 V
461.00	4.24	160.71	460.77	-7.44	3.39	14,544,371.06	2,049,863.75	40° 2' 27.937 N	109° 32' 13.718 V
556.00	6,31	163.57	555.36	-15.76	6.03	14,544,362.78	2,049,866.52	40° 2' 27.855 N	109° 32′ 13.684 V
652.00	8.04	158.87	650.61	-27.09	9.94	14,544,351.53	2,049,870.62	40° 2' 27.743 N	109° 32′ 13.634 V
747.00	9.80	156.42	744.45	-40.70	15.57	14,544,338.01	2,049,876.47	40° 2' 27.608 N	109° 32' 13.561 V
842,00	11.48	151.73	837.82	-56.43	23.29	14,544,322.41	2,049,884.44	40° 2' 27.453 N	109° 32' 13.462 V



#### SDI Survey Report - Geographic



Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-15C PAD NBU 921-15G2S

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature

Survey Calculation Method: EDM5000-RobertS-Local

Measured Depth (ft) 937.00	inclination		Vertical						
(ft)	Inclination					Map	Map		
937.00	(°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
	12.42	150,15	930,76	-73.62	32,85	14,544,305.38	2,049,894.29	40° 2' 27,283 N	109° 32' 13,339 W
1,031.00	13.15	150.84	1,022.43	-91.73	43.09	14,544,287.44	2,049,904.83	40° 2' 27.104 N	109° 32' 13.207 W
1,127.00	13.09	159.73	1,115.93	-111.46	52.18	14,544,267.86	2,049,914.24	40° 2' 26,909 N	109° 32' 13.091 W
1,222.00	14.15	159.11	1,208.26	-132.40	60.05	14,544,247.05	2,049,922.45	40° 2′ 26.702 N	109° 32' 12.989 W
1,317.00	13.84	158.55	1,300.44	-153.83	68.34	14,544,225.77	2,049,931.09	40° 2' 26.490 N	109° 32' 12.883 W
1,413.00	13.12	155.45	1,393.79	-174.43	77.07	14,544,205.31	2,049,940.16	40° 2' 26.286 N	109° 32' 12.771 W
1,508.00	12.89	155.49	1,486.36	-193.87	85.94	14,544,186.01	2,049,949.35	40° 2' 26.094 N	109° 32' 12.656 W
1,604.00	13.08	154.47	1,579.90	-213.42	95.07	14,544,166.62	2,049,958.79	40° 2' 25.901 N	109° 32' 12.539 W
1,698.00	13.12	156.21	1,671.46	-232.78	103.96	14,544,147.41	2,049,968.00	40° 2' 25.709 N	109° 32' 12.425 W
1,793.00	12.22	157.00	1,764.14	-251.90	112.23	14,544,128.43	2,049,976.59	40° 2' 25.520 N	109° 32' 12.318 W
1,887.00	12,24	159.26	1,856.01	-270.38	119.65	14,544,110.07	2,049,984.31	40° 2' 25,338 N	109° 32' 12,223 W
1,982.00	13.31	159.61	1,948.66	-290.05	127.03	14,544,090.53	2,049,992.01	40° 2' 25.143 N	109° 32' 12.128 W
2,077.00	13.09	153.45	2,041.15	-309.92	135.64	14,544,070.80	2,050,000.95	40° 2' 24.947 N	109° 32' 12.017 W
2,173.00	12.76	153.89	2,134.72	-329.16	145.17	14,544,051.71	2,050,010.79	40° 2' 24.757 N	109° 32' 11.895 W
2,268.00	13.14	157.63	2,227.30	-348.57	153.90	14,544,032.45	2,050,019.84	40° 2' 24.565 N	109° 32' 11.783 W
2,363.00	12.35	157.21	2,319.96	-367.92	161.94	14,544,013.24	2,050,028.20	40° 2' 24.374 N	109° 32' 11.679 W
2,456.00	11,86	161.79	2,410.90	-386.17	168.78	14,543,995.10	2,050,035.34	40° 2' 24.193 N	109° 32' 11.591 W
2,551.00	10.94	160.95	2,504.02	-403,97	174.77	14,543,977.41	2,050,041.62	40° 2' 24.017 N	109° 32' 11.514 W
2,647.00	11.16	158.48	2,598.24	-421.22	181.16	14,543,960.26	2,050,048.28	40° 2' 23.847 N	109° 32' 11.432 W
2,742.00	11.00	157.91	2,691.47	-438.17	187.94	14,543,943.43	2,050,055.34	40° 2' 23.679 N	109° 32' 11.345 W
2,835.00	10.84	156.41	2,782.79	-454.41	194.77	14,543,927.30	2,050,062.44	40° 2' 23.519 N	109° 32' 11.257 W
2,867.00	10.85	153,99	2,814.22	-459.87	197.30	14,543,921.88	2,050,065.06	40° 2' 23,465 N	109° 32' 11.224 W
LAST SDI	MWD SURF	ACE SURVEY	1						
2,976.00	8.81	152.28	2,921.61	-476.48	205.68	14,543,905.41	2,050,073.71	40° 2' 23,301 N	109° 32' 11.117 W
FIRST SDI	MWD PROD	DUCTION SUI	RVEY						
3,067.00	7.06	149.43	3,011.74	-487.47	211.77	14,543,894.53	2,050,079.98	40° 2' 23.192 N	109° 32' 11.038 W
3,157.00	5.91	146,02	3,101.16	-496.07	217.17	14,543,886.01	2,050,085.52	40° 2' 23,107 N	109° 32' 10,969 W
3,248.00	5.01	147.22	3,191.75	-503.30	221.94	14,543,878.87	2,050,090.41	40° 2' 23.036 N	109° 32' 10.908 W
3,339.00	4.26	144.93	3,282.45	-509.40	226.03	14,543,872.83	2,050,094.60	40° 2' 22,975 N	109° 32' 10,855 W
3,429.00	3.99	146.65	3,372.21	-514.75	229.67	14,543,867.54	2,050,098.33	40° 2' 22.922 N	109° 32' 10.808 W
3,520.00	3.87	145.16	3,463.00	-519.92	233.17	14,543,862.43	2,050,101.91	40° 2' 22.871 N	109° 32' 10.763 W
3,610.00	3.22	128.25	3,552.83	-523.98	236.89	14,543,858.43	2,050,105.70	40° 2' 22.831 N	109° 32' 10.715 W
3,701.00	2.28	141.11	3,643.73	-526.97	240.03	14,543,855.49	2,050,108.89	40° 2' 22,802 N	109° 32' 10,675 W
3,791.00	1.01	172.85	3,733.69	-529.15	241.26	14,543,853.33	2,050,110.15	40° 2' 22,780 N	109° 32' 10.659 W
3,882.00	1.38	188.85	3,824.67	-531,03	241.19	14,543,851.46	2,050,110.11	40° 2' 22.761 N	109° 32' 10.660 W
3,973.00	1.43	185.41	3,915.64	-533.24	240.91	14,543,849.24	2,050,109.87	40° 2' 22.740 N	109° 32' 10.664 W
4,063.00	1.70	188.73	4,005.61	-535.68	240.60	14,543,846.80	2,050,109.60	40° 2' 22,715 N	109° 32' 10.668 W
4,154.00	1.99	192.07	4,096.56	-538.56	240.07	14,543,843.91	2,050,109.12	40° 2' 22,687 N	109° 32' 10.674 W
4,244.00	2.10	187.94	4,186.50	-541.72	239.51	14,543,840.74	2,050,108.61	40° 2' 22,656 N	109° 32' 10.682 W
4,335.00	2.11	183.26	4,277.44	-545.04	239,19	14,543,837.41	2,050,108.34	40° 2' 22.623 N	109° 32' 10.686 W
4,426.00	2.16	176.18	4,368.38	-548.43	239.21	14,543,834.03	2,050,108.42	40° 2' 22.589 N	109° 32' 10.686 W
4,516.00	2.25	175.84	4,458.31	-551.88	239.45	14,543,830.58	2,050,108.72	40° 2' 22,555 N	109° 32' 10.682 W
4,607.00	2.22	183.79	4,549.24	-555.42	239.46	14,543,827.04	2,050,108.79	40° 2' 22.520 N	109° 32' 10.682 W
4,697.00	2.06	177.04	4,639.18	-558.78	239.43	14,543,823.68	2,050,108.81	40° 2' 22,487 N	109° 32' 10.683 W
4,788.00	2.02	177.11	4,730.12	-562.01	239,59	14,543,820.45	2,050,109.03	40° 2' 22.455 N	109° 32' 10.681 W
4,879.00	1.76	137.03	4,821.08	-564.64	240.63	14,543,817.84	2,050,110.10	40° 2' 22.429 N	109° 32' 10.667 W
4,969.00	1.67	149.68	4,911.04	-566.78	242.23	14,543,815.73	2,050,111.74	40° 2' 22.408 N	109° 32' 10.647 W
5,060.00	1.82	151.96	5,001.99	-569.20	243.58	14,543,813.33	2,050,113.13	40° 2' 22.384 N	109° 32' 10.629 W
5,150.00	1.82	158.69	5,091.95	-571.79	244.77	14,543,810.76	2,050,114.37	40° 2' 22,359 N	109° 32' 10.614 W
5,241.00	1.80	165.53	5,182.90	-574.52	245.65	14,543,808.04	2,050,115.29	40° 2′ 22.332 N	109° 32' 10.603 W
5,332.00	1.15	141.31	5,273.87	-576.62	246.58	14,543,805.96	2,050,116.25	40° 2' 22.311 N	109° 32' 10.591 W
5,422.00	1.06	37.36	5,363.86	-576.66	247.65	14,543,805.93	2,050,117.33	40° 2' 22.310 N	109° 32' 10.577 W
5,513.00	0.96	46.29	5,454.85	-575.47	248.71	14,543,807.15	2,050,117.00	40° 2' 22.322 N	109° 32' 10.563 W
5,603.00	0.90	58.19	5,544.84	-574.69	249.67	14,543,807.13	2,050,119.31	40° 2' 22.330 N	109° 32' 10,551 W
5,694.00	0.38	68.09	5,635.84	-574.32	250.37	14,543,808.32	2,050,110.01	40° 2' 22.334 N	109° 32' 10.542 W



### Survey Report - Geographic



Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-15C PAD NBU 921-15G2S

Wellbore: Design: OH OH Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature

EDM5000-RobertS-Local

						10年 末期 5 年 日			
Measured			Vertical			Мар	Мар		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing (usft)	Easting (usft)		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usit)	(usit)	Latitude	Longitude
5,784.00	0.44	100.38	5,725.84	-574.27	250.99	14,543,808.38	2,050,120.62	40° 2' 22,334 N	109° 32' 10.5
5,875.00	0.44	109,69	5,816.83	-574.45	251.66	14,543,808.21	2,050,121.30	40° 2' 22.332 N	109° 32' 10.5
5,966.00	0.52	146.98	5,907.83	-574.91	252.21	14,543,807.76	2,050,121.86	40° 2' 22,328 N	109° 32' 10.5
6,056.00	0.59	169.92	5,997.83	-575.71	252.52	14,543,806.96	2,050,122.18	40° 2' 22.320 N	109° 32' 10.5
6,147.00	0.78	185.59	6,088.82	-576.79	252,54	14,543,805.89	2,050,122.21	40° 2' 22.309 N	109° 32' 10.5
6,238.00	0.92	189.18	6,179.81	-578.13	252.36	14,543,804.55	2,050,122.06	40° 2' 22.296 N	109° 32' 10.5
6,328.00	2.11	140.81	6,269.78	-580.12	253.29	14,543,802.57	2,050,123.02	40° 2' 22.276 N	109° 32' 10.5
6,419.00	2.29	143.79	6,360.71	-582.89	255.43	14,543,799.84	2,050,125.20	40° 2' 22.249 N	109° 32' 10.4
6,509.00	2.32	147.08	6,450.64	-585.87	257.48	14,543,796.89	2,050,127.30	40° 2' 22.219 N	109° 32' 10.4
6,600.00	2.55	155.22	6,541.56	-589.25	259.33	14,543,793.54	2,050,129.21	40° 2' 22.186 N	109° 32' 10.4
6,691.00	2.46	158.12	6,632.47	-592.90	260.91	14,543,789.91	2,050,130.84	40° 2' 22.150 N	109° 32' 10.4
6,781.00	2.73	159.35	6,722.38	-596.70	262.38	14,543,786.14	2,050,132.38	40° 2' 22.112 N	109° 32' 10.3
6,872.00	0.62	132.52	6,813.34	-599.06	263.51	14,543,783.80	2,050,133.55	40° 2' 22.089 N	109° 32' 10.3
6,963.00	0.79	132.98	6,904.33	-599.82	264.33	14,543,783.05	2,050,134.38	40° 2' 22.081 N	109° 32' 10.36
7,053.00	1.23	149.77	6,994.31	-601.08	265.27	14,543,781.81	2,050,135.34	40° 2' 22.069 N	109° 32' 10.3
7,144.00	0.18	2.47	7,085.31	-601.78	265.77	14,543,781.12	2,050,135.85	40° 2' 22.062 N	109° 32' 10.3
7,234.00	0.18	125.87	7,175.31	-601.72	265.89	14,543,781.18	2,050,135.97	40° 2' 22.063 N	109° 32' 10.3
7,324.00	0.34	149.44	7,265.31	-602.04	266.14	14,543,780.87	2,050,136.23	40° 2' 22.060 N	109° 32' 10.3
7,415.00	0.53	153.11	7,356.30	-602.64	266.47	14,543,780.26	2,050,136.56	40° 2' 22.054 N	109° 32' 10.3
7,506.00	0.81	160.15	7,447.30	-603.62	266.88	14,543,779.29	2,050,136.99	40° 2' 22.044 N	109° 32' 10.3
7,596.00	0.97	152.94	7,537.29	-604.90	267.44	14,543,778.02	2,050,137.57	40° 2' 22.031 N	109° 32' 10.3
7,687.00	0.95	158.33	7,628.27	-606.29	268.07	14,543,776.65	2,050,138.22	40° 2' 22,018 N	109° 32' 10.3
7,777.00	1.14	154.08	7,718.26	-607,79	268.73	14,543,775.16	2,050,138.92	40° 2' 22,003 N	109° 32' 10.3
7,868.00	0.72	211.78	7,809.25	-609.09	268.83	14,543,773.86	2,050,139.03	40° 2' 21.990 N	109° 32' 10.3
7,958.00	0.35	244.34	7,899.24	-609.69	268.28	14,543,773.25	2,050,138.50	40° 2' 21.984 N	109° 32′ 10.3
8,049.00	0.50	216.51	7,990.24	-610.13	267.80	14,543,772.81	2,050,138.02	40° 2' 21.980 N	109° 32' 10.3
8,140.00	0.62	213,49	8,081.24	-610.86	267.29	14,543,772.07	2,050,137.52	40° 2' 21.972 N	109° 32' 10.3
8,230.00	0.53	187.74	8,171.23	-611.67	266.96	14,543,771.24	2,050,137.21	40° 2' 21.964 N	109° 32' 10.3
8,321.00	0.67	168.00	8,262.23	-612.61	267.02	14,543,770.31	2,050,137.28	40° 2' 21.955 N	109° 32' 10.3
8,411.00	0.97	170.11	8,352.22	-613.88	267.26	14,543,769.05	2,050,137.54	40° 2' 21.943 N	109° 32' 10.3
8,502.00	0.97	170.50	8,443.21	-615.40	267.52	14,543,767.53	2,050,137.82	40° 2' 21.928 N	109° 32' 10.3
8,593.00	1.08	160.14	8,534.19	-616.96	267.94	14,543,765.97	2,050,138.27	40° 2' 21.912 N	109° 32' 10.3
8,683.00	1.19	155.40	8,624.17	-618.61	268.61	14,543,764.34	2,050,138.97	40° 2' 21.896 N	109° 32' 10.3
8,774.00	1.19	132.82	8,715.16	-620.11	269.70	14,543,762.85	2,050,140.08	40° 2' 21.881 N	109° 32' 10.2
8,864.00	1.23	137.12	8,805.14	-621.45	271.04	14,543,761.53	2,050,141.45	40° 2' 21.868 N	109° 32' 10.2'
8,955.00	0.88	171.04	8,896.12	-622.86	271.82	14,543,760.14	2,050,142.24	40° 2' 21.854 N	109° 32' 10.2
9,045.00	0.88	113.00	8,986.11	-623.81	272.56	14,543,759.20	2,050,143.00	40° 2' 21.844 N	109° 32' 10.2
9,136.00	0.71	96.35	9,077.10	-624.15	273.76	14,543,758.88	2,050,144.21	40° 2' 21.841 N	109° 32' 10.2
9,227.00	0.12	19.29	9,168.10	-624.12	274.35	14,543,758.92	2,050,144.80	40° 2' 21.841 N	109° 32' 10.2
9,317.00	0.59	296.49	9,258.10	-623.82	273.97	14,543,759.21	2,050,144.42	40° 2' 21.844 N	109° 32' 10.2
9,408.00	0.61	309.76	9,349.09	-623.31	273.18	14,543,759.72	2,050,143.62	40° 2' 21.849 N	109° 32' 10.2
9,498.00	0.43	308.35	9,439.09	-622.79	272.55	14,543,760.22	2,050,142.97	40° 2' 21.854 N	109° 32' 10.2
9,589.00	0.53	215.51	9,530.09	-622.92	272.03	14,543,760.08	2,050,142.46	40° 2' 21,853 N	109° 32' 10.2
9,680.00	0.79	185,86	9,621.08	-623.89	271.73	14,543,759.11	2,050,142.17	40° 2' 21.844 N	109° 32' 10.2
9,770.00	1.13	167.42	9,711.07	-625.37	271.86	14,543,757.63	2,050,142.33	40° 2' 21.829 N	109° 32' 10.2
9,861.00	0.88	159.57	9,802.06	-626.90	272.29	14,543,756.11	2,050,142.79	40° 2' 21.814 N	109° 32′ 10.2
9,951.00	1.14	155.66	9,892.04	-628.36	272.90	14,543,754.65	2,050,143.42	40° 2' 21.799 N	109° 32' 10.2
10,042.00	1.41	158.74	9,983.02	-630.23	273,68	14,543,752.80	2,050,144.23	40° 2' 21,781 N	109° 32' 10.2
10,133.00	1.49	148.01	10,073.99	-632,28	274.72	14,543,750.77	2,050,145.30	40° 2' 21.761 N	109° 32' 10.2
10,223.00	1.76	136.31	10,163.95	-634.27	276.29	14,543,748.80	2,050,146.91	40° 2' 21.741 N	109° 32′ 10.2
10,278.00	1.92	126.88	10,218.93	-635.43	277.61	14,543,747.66	2,050,148.25	40° 2' 21.729 N	109° 32' 10.1
	I MWD PROD								
10,337.00	1.92	126.88	10,277.89	-636.62	279.19	14,543,746.50	2,050,149.85	40° 2' 21.718 N	109° 32' 10.1



### **SDI**Survey Report - Geographic



Company: Kerr McGee Oil and Gas Onshore LP

 Project:
 Uintah County, UT UTM12

 Site:
 NBU 921-15C PAD

 Well:
 NBU 921-15G2S

Wellbore: OH Design: OH Local Co-ordinate Reference:

TVD Reference:
MD Reference:
North Reference:

Survey Calculation Method: Database:

Well NBU 921-15G2S

GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145) GL 4972' & KB 14' @ 4806.00ft (ENSIGN 145)

True

Minimum Curvature EDM5000-RobertS-Local

Design Annotations  Measured	Vertical	Local Coo	rdinates	
Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
182.00	182.00	0.53	-0.42	FIRST SDI MWD SURFACE SURVEY
2,867.00	2,814.22	<b>-4</b> 59.87	197.30	LAST SDI MWD SURFACE SURVEY
2,976.00	2,921.61	-476.48	205.68	FIRST SDI MWD PRODUCTION SURVEY
10,278.00	10,218.93	-635.43	277.61	LAST SDI MWD PRODUCTION SURVEY
10,337.00	10,277.89	-636.62	279.19	SDI PROJECTION TO TD

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ı	Checked By:	Approved By:	Date: